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BIRDS OF THE PYMATUNING REGION

By WILLIAM C. GRIMM



Wood Duck

COMMONWEALTH OF PENNSYLVANIA

JOHN S. FINE, GOVERNOR



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BIRDS

OF THE

PYMATUNING REGION

•

By WILLIAM C. GRIMM

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PUBLISHED BY

THE PENNSYLVANIA GAME COMMISSION

HARRISBURG • PENNSYLVANIA

January, 1952



Photo by W. Bryant Tyner

**The Bald or American Eagle—Symbol of our freedom and independence—nests
at Pymatuning.**

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INTRODUCTION

In 1928, Dr. George M. Sutton's report on *The Birds of Pymatuning Swamp and Conneaut Lake* appeared in the Annals of the Carnegie Museum. It is a comprehensive account of the bird life of the region based upon his own field work from 1922 to 1927, and also upon data supplied by numerous observers. In the writers opinion, Dr. Sutton's report is the most outstanding contribution to the science of ornithology that has ever been made in any locality of western Pennsylvania. However, during the two decades which have elapsed since its publication, man has made some extensive changes in the ecology of the region. A large portion of the Pymatuning swamp and bog area has since been converted into a vast artificial lake with a shore line of approximately seventy miles. As a result there have been many noteworthy changes in the bird life of the region, as well as an accumulation of additional data pertaining to the occurrences and distribution of the species. The present work is not intended to supersede Dr. Sutton's report, but rather to amplify it and bring our knowledge of the bird life of the region up to date.

The author began his field work in the Pymatuning region in November 1939 when he was assigned there to study the fur-bearing animals, particularly the muskrat, by the Pennsylvania Game Commission under its Pittman-Robertson Project 8-R. Until February 1942, he was privileged to be in the field almost continuously. Following the interruption of the war years, he had the opportunity to do a considerable amount of field work between September 1945 and 1947. Every source of information has been utilized to supplement the author's own personal observations. To a very large degree this has been a cooperative work.

While the author wishes to express his appreciation to all of those persons who have in any way contributed to the present undertaking, a special debt of gratitude is owed the late Mr. Reinhold L. Fricke of the Carnegie Museum, for it was at his suggestion, and through his personal interest, that the work was inaugurated. During the years that Mr. Fricke conducted his extensive field work and collecting, he made many outstanding contributions to our knowledge of the bird life of the Pymatuning region. Messrs. C. B. Shoemaker, Hal H. Harrison, Arthur Swoger, John F. Mehner, and Earl Davis have contributed their personal records, some of which cover a period of several years and partially fill the gap in the author's own observations. Mr. Raymond M. Sickles, the Game Protector in direct charge of the Pennsylvania Game Commission's Pymatuning Refuge, has supplied information regarding occurrences of waterfowl and other birds in the region. Mr. J. Glenn Crumb has not only supplied much data on the bird life; but, in collaboration with his sister, Miss Retta Crumb, recorded all of the

weather data for a period of eight years. Mr. George M. Thorpe has put at the author's disposal the records of the Pymatuning Group, which consists of a number of persons interested in local ornithology who make periodic pilgrimages to the Pymatuning. Innumerable published records have been utilized and these authors are listed in the bibliography. The data on ducks banded at the Pymatuning was supplied by Mr. Carl R. Warren, and was obtained from the files of the United States Fish and Wildlife Service.

A fairly complete series of specimens of the birds of the region have been collected through the years by several individuals. The material collected by Dr. Sutton and by Messrs. Todd and Fricke is deposited in the Carnegie Museum, Pittsburgh, Pa. There is a fine series of mounted waterfowl, marsh, and shore birds in the Pymatuning Museum, located at the Pymatuning Refuge. The latter specimens were for the most part collected by Messrs. Burt L. Oudette, Frank W. Bauder, and the late J. August Beck, the majority of them being taken in the Pymatuning region.

The subspecific determinations used throughout this report, with few exceptions, follow those given by Mr. W. E. Clyde Todd in his monumental work on the *Birds of Western Pennsylvania*, but the scientific nomenclature has been brought up to date by adopting the corrections and additions in the Fourth (1931) Check List of the American Ornithologists' Union as published in subsequent supplements up to and including the twenty-third (July 1948).

Grateful appreciation is extended to the State Conservation Commission of Iowa for permitting us to use four splendid color illustrations by Maynard F. Reece; to Ned Smith, Game Commission artist and Acting Editor of *Game News*, for his fine color and line drawings; to Leo A. Luttringer, Chief of the Conservation Education Division of the Commission, for arranging the format; and to the photographers who are represented.

LOCATION

The Pymatuning Region is located in the western part of Crawford County, Pennsylvania, and extends across the state line into Ashtabula County, Ohio. The present report covers the entire region which includes not only the Pymatuning Lake and the adjacent swampland but Conneaut Lake and most of the Conneaut Lake Outlet marshes to the east, and north to the line separating Crawford and Erie Counties. This area embraces some 450 square miles of territory including all, or large portions of, the townships of South Shenango, North Shenango, Pine, Conneaut, Beaver, Spring, Summerhill, Summit, Sadsbury, East Fallowfield, and Greenwood in Crawford County; and the extreme eastern portions of Richmond, Andover, and Williamsfield Townships in Ashtabula County. This region lies between eleven and thirty-five miles due south of Lake Erie, being between 41°9' and 41°50' N. Latitude and 80°10' and 80°35' W. Longitude.

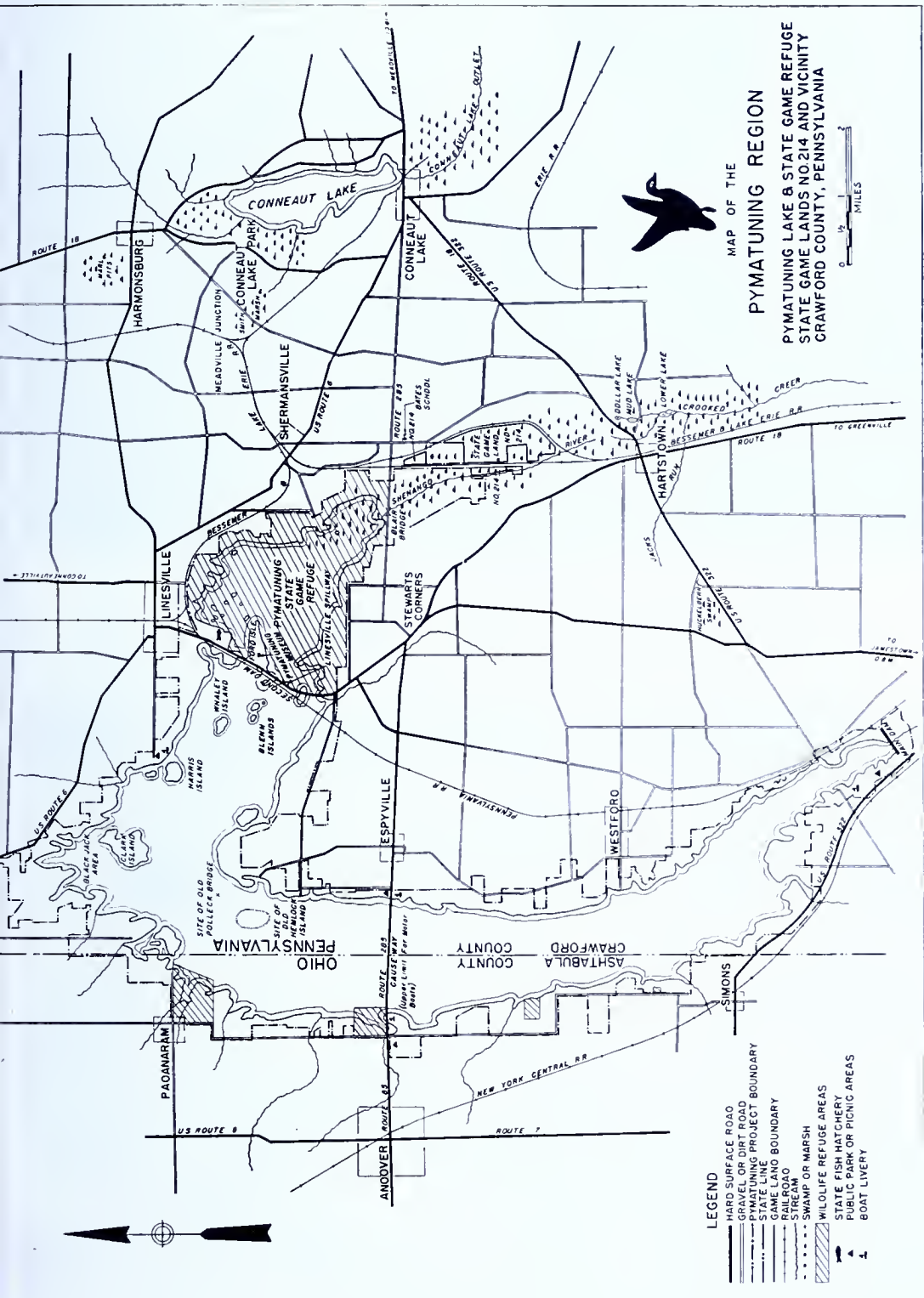




Photo Penna. Game Comm.

View of refuge area from Pymatuning Museum.

Photo by the author.



GENERAL SURVEY OF THE REGION

The present day Pymatuning Region owes its topographical features to the great sheets of glacial ice which many thousands of years ago overrode the entire region, leveled off its hills, filled in its valleys, and left it with a comparatively level or gently rolling terrain. The rocks which underly the region outcrop in but a few of the present day stream valleys. Most of them belong to the Pocono, Catskill, and the Chemung formations. Practically everywhere, the native rock is buried deep beneath sands, gravels, and clays which were transported by the great glaciers in the past. Such deposits are often hundreds of feet in depth, and one frequently encounters great granite boulders whose source of origin was many hundreds of miles north of the present region.

Before the advent of the ice sheets, the streams of this region all drained to the northwest into the present day Lake Erie basin; but when the ancient channels of such streams became choked with glacial debris, their waters were forced to find new outlets to the southward. Lakes were formed in many of the old valleys. Conneaut Lake, the largest natural lake in the state, is of glacial origin. Geological evidence indicates that, following the final retreat of the glacial ice, a more extensive lake covered a large part of the present day Pymatuning area, being formed in the valley of one of its old preglacial streams. Sediment which was washed into the lake bed, together with the accumulation of plant debris, eventually filled in the basin and converted this old post-glacial Pymatuning Lake into a vast swamp and bog. Near the village of Hartstown there are three small areas of open water which probably represent all that today remains of the original lake. Although filling had become rather complete over most of the area, there were still a number of places where "quaking bogs" attested to the fact that the substratum had not quite solidified.

PYMATUNING SWAMP

The Pymatuning Swamp was described in some detail by Sutton (1928). Within it the Shenango River had its origin. From a point just north of Hartstown it flowed northward toward the village of Shermansville; thence following a northwestwardly course, it flowed south of Linesville toward and across the state line into Ohio. There, bending abruptly to the southeast it reentered Pennsylvania, continuing southward slightly to the west of Espyville, Westford, and Jamestown. This swamp extended in the form of a huge crescent from Hartstown to a point just southwest of Espyville. Bordering the river channel, which was often nearly choked with growths of aquatic plants, was a variable expanse of marsh, or thicket of swamp shrubs. Crooked Creek flows southward from the swamp, the divide between the two streams being barely perceptible in the swamp and marsh just north of Hartstown.

Although the earliest settlements in the region date back about one hundred and fifty years, the wooded fastnesses of the swamp itself were

little disturbed for a long time after that. Sutton stated that it was the last resort of both the Wild Turkey and the Passenger Pigeon in the present region. Finally farms encroached upon the swamp, many acres of land were drained and cultivated, especially for the growing of onions. There were, scattered throughout the swamp, several parcels of higher ground which were locally referred to as "islands". These were partially cleared and farmed. Most of these undoubtedly existed as islands in the old post-glacial lake. Several roads were constructed across the swamp, these often being "corduroyed", or laid upon a base of logs where they traversed the wettest areas. Within the past half century much of the forested swamp was lumbered, but usually only the larger trees of the best timber species were removed. Quantities of white pine, hemlock, tamarack, and such hardwoods as black ash, cherry, beech, birch, and maple were taken from the swamp forests. Netting and Van Dersal (1934) stated that a timber cruise in 1921 indicated that some 800,000 board feet of commercial tamarack timber was still available at that time. A similar, but less thorough, cruise made in 1927 disclosed that 90 per cent of the tamarack had been killed, apparently by drought during the years between 1922 and 1924.

In 1844 the Beaver and Lake Erie Canal was opened to navigation. It crossed the border of the swamp between Hartstown and Shermansville, its course being evident today in many places. Some six hundred acres of land lying just north of Hartstown were cleared for the construction of a reservoir, and the level of Conneaut Lake was raised about three feet by the construction of an embankment across its outlet. Netting and Van Dersal (1934) wrote of the prevalence of malaria in the district following the construction of the canal. In 1871 the Beaver and Lake Erie Canal was abandoned, and subsequently the track of the Bessemer and Lake Erie Railroad was constructed along the old canal bank. In later years, a second track of the railroad was laid more directly across the swamp between Hartstown and Shermansville. Sutton stated that much difficulty was experienced in crossing the swamp, but eventually a solid bottom was found after spliced piles were sunk to a depth of 200 feet.

Through the years, many proposals were made to drain the Pymatuning, but fortunately no large-scale drainage attempt was ever made. In 1913 the Legislature of the Commonwealth of Pennsylvania passed what was known as the "Pymatuning Dam Act", which authorized the establishment of a reservoir by the construction of a dam at the outlet of the swamp.

PYMATUNING LAKE

Construction of the main dam, which is located near Jamestown, Pennsylvania, was started on October 6, 1931. Clearing of the forested swamp areas which were to be flooded was begun on January 11, 1932. While the standing trees were felled, and much of the resultant debris was burned, a great deal of the fallen timber, brush, and stumps was not removed. As a consequence, the shore line of the lake has been

littered with extensive stump patches, and logs which have since drifted ashore. The original plans for the dam were altered, and a second dam was constructed near the town of Linesville to carry the public highway and the track of the Pennsylvania Railroad across the impoundment. Between the towns of Espyville, Pennsylvania, and Andover, Ohio, a causeway was constructed to carry the public highway between those two points. The gate of the upper dam, forming the Upper or Linesville Lake, was closed on December 3, 1933, and that of the main dam was closed on January 23, 1934. By September 14, 1935, the main reservoir had filled to within four and a half feet of its maximum depth. The total reservoir area created by the two dams is 16,240 acres, or 25.7 square miles. The impoundment has a length of about sixteen miles and an average width of one and six-tenths miles. The widest portion of the lake is two and two-tenths miles at the Espyville-Andover causeway. The entire lake has a shore line of approximately seventy miles and a total capacity of 64,275,000,000 gallons. The maximum depth of the Lower or Main Lake is thirty-five feet while that of the Upper or Linesville Lake is 14 feet. Approximately one-quarter of the water area lies within the State of Ohio. It is almost eighteen times as large as nearby Conneaut Lake. The primary purpose of the reservoir is to control the flow of water in the Shenango and Beaver Rivers. Water is consequently stored during the periods of heavy run-off and released during the drier seasons of the year. This results in a marked fluctuation in the level of the Main Lake, but the Upper Lake is maintained at a fairly constant level.

During migration thousands of ducks and geese stop to rest and feed in the sanctuary.

Photo Penna. Game Comm.



Some eight thousand acres of land surrounding the maximum flow-line of the lake are in public ownership. Most of the land which surrounded the Lower Lake was in farms or in farm woodlot. Hundreds of acres of the poorer class field areas were planted with coniferous trees while many of the better farm fields have since been leased and continued in cultivation. A large park area was developed at the site of the main dam; and a few small park or picnic areas were created elsewhere on the shoreline, both in Pennsylvania and Ohio. The lake has become a major recreation area, visited annually by thousands of fishermen, hunters, and tourists. For several years, motor boats were entirely banned from Pymatuning waters; but the use of such boats, with certain restrictions, is now permitted on the Main Lake between the dam and the Espyville-Andover causeway. The creation of the lake has resulted in the building of many summer homes and cottages on land near the lake and adjacent to the public-owned land.

PYMATUNING STATE GAME REFUGE

The portion of the reservoir formed by the upper dam, and known as the Upper or Linesville Lake, has been leased by the Pennsylvania Game Commission from the Water and Power Resources Board of the Department of Forests and Waters. It was set aside as a refuge area in September 1935. With the construction of the second dam it became possible to maintain a constant level in the Linesville Lake of 1,010

Floating islands with sedges and cattails in Pymatuning Refuge.

Photo by the author.



feet above mean sea level. Headquarters were established on Ford Island, a point about midway along the upper dam. Here, too, is located the Pymatuning Museum which is maintained by the Game Commission. This houses a splendid and fairly representative collection of the waterfowl, marsh, and shore birds which may be found in the region.

The refuge area originally comprised about 2,500 acres of water area and 1,170 acres of forested, brush, and tillable land. In 1941, the refuge line was moved from the Blair Bridge Road a distance of some four hundred yards to the north, thus opening up that portion to public hunting. In 1940 the Pennsylvania Fish Commission established a hatchery within the refuge area near the town of Linesville. Since that time a number of holding ponds have been constructed, and in 1946 the Commission was granted that portion of the area which is to be developed for hatchery purposes. Fish are regularly netted from the waters of the refuge, where all fishing is prohibited, and used for stocking areas which are open to public fishing. Crops of corn, wheat, and buckwheat are annually produced on the refuge, either to be harvested and used for winter feeding or left in the fields for consumption by wildlife.

Soon after establishment the Pymatuning Refuge began to hold great promise as a feeding and resting area for waterfowl, marsh, and shore birds. It was most astoundingly successful during the first few years of its existence as a nesting area as well. While literally thousands of waterfowl utilized the area during their semi-annual migrations, it was the most remarkable record of nesting species that made ornithological history. Not only did such species as the Mallard, Black Duck, Blue-winged Teal, and Wood Duck, which formerly nested in the swamp in limited numbers, almost immediately increase manyfold; but the almost unbelievable nesting of the Redhead, Ring-neck Duck, Gadwall, and Ruddy Duck occurred on more than one occasion. It is true that a newly created water area is exceedingly attractive to many waterfowl. Pymatuning at the time afforded an abundance of food and excellent nesting cover. It was flooded at a time when a disastrous major drought had all but devastated a large portion of the major waterfowl breeding grounds in North America. Undoubtedly in this combination of factors lies the explanation of the almost immediate success of the Pymatuning Refuge and of the most unusual events which occurred there.

Since 1940 the Pymatuning has markedly declined as a waterfowl breeding area. The fields which had so recently been retired from pasture or cultivation have gradually gone through the seral stages leading up to their reclamation by the forest. Some of the old fields had been planted with pines, spruces, and Japanese larch trees before the Game Commission leased the land. It was good duck nesting territory when the trees were small with an abundance of dewberry, grasses, and weedy plants between the little trees. Today, however, these tree plantations are useless as waterfowl breeding places; the trees are fifteen

or more feet in height; their dense crowns have closed in; and there is little beneath them but a carpet of fallen needles. Other areas about the shore line have become thickets of swamp shrubs, or of such trees as aspen, fire cherry, sumach, and red maple. The area holds no promise that it will ever again become the waterfowl breeding paradise that it was prior to 1940. Yet it remains as a very valuable resting and feeding area for migrating waterfowl.

While ecological succession and reforestation plantings were eliminating much of the best nesting territory, another combination of factors was at work eliminating much of the best aquatic food plants from the lake itself. Shortly after the area was flooded, such plants as the coontail (*Ceratophyllum demersum*), waterweed (*Anacharis canadensis*), and several species of pondweeds (*Potamogeton* sp.) spread from the open water of the river channel and formed dense beds over many acres of the new lake. Many of these aquatics rank high among the waterfowl foods. The huge quantities which were available naturally attracted thousands of waterfowl to the area. On September 7-9, 1944, Doctors John W. Aldrich and Francis M. Uhler of the United States Fish and Wildlife Service made a thorough examination of the area. They made the following report of conditions to the Pennsylvania Game Commission.



Old corduroy road in Pymatuning Refuge.

Photo by the author.



Photo by the author.

Growth of wild duck millet (*Echinochola*) in Pymatuning Refuge.

“The reservoir is now almost barren of submerged vegetation. The coontail and waterweed which spread from the original tiny open-water areas of the former swamp until most of the Upper Reservoir was well vegetated with these aquatic plants in 1936 began to decrease in 1937 along with the advent of the European carp. By 1938 the carp began to become conspicuous in the Upper Reservoir in spite of the fact that an effort was made to exclude the tremendous carp population of the Lower Reservoir from the upper unit by installing wire screening at the spillway. The carp population has now increased to the point where the turbidity that they create while rooting for feed has made the survival of submerged vegetation practically impossible in any but the shallowest portions of the reservoir. At the time of this study the water in practically all parts of the reservoir (except a few isolated shallow areas on the southeast side) was so turbid that a Secchi disk (a white metal disk 20 cm. in diameter) became invisible when submerged to a depth of 10 to 11 inches at mid-day. Only traces of submerged vegetation were found in water with a depth greater than one foot. The problem of turbidity was also intensified by the development of a tremendous amount of minute, suspended blue-green algae of the *Aphanocapsa* type with small amounts of *Microcystis* sp. Since the original marsh vegetation has all been drowned out by the higher water levels, increased wave action likewise tends to further intensify

the turbidity of the shallow areas. This wave action has washed the productive soil from most of the marginal areas along the abrupt shore, leaving many of these borders so covered with shale-like stones that good growths of marsh plants can not thrive on such margins. Likewise much of the original light, humic, bottom soil has been brought into suspension by the combination of wave action and carp activity, and permitted much of it to be washed out of the Upper Reservoir during periods of heavy run-off. This has reduced large areas of the bottom to practically soilless peat and exposed roots of former trees. These conditions, together with those previously mentioned, make the production of extensive growths of submerged plants very difficult or impossible."

Upon the advice of Doctors Uhler and Aldrich the level of the lake was lowered approximately eighteen inches at the Linesville Spillway in the spring of 1945. This resulted in the exposure of considerable mud flat about the margins of the lake. Seed of both wild duck millet (*Echinochloa*) and of smartweeds (*Polygonum*) were sown and, after the plants had matured, the water level was restored to the normal depth. This experiment was attended with some degree of success; and, in the fall of that year, the waterfowl population at the lake was somewhat increased over that of the preceding few years. Although less success was attained with the growth of millet in subsequent years, the lowering of the water level has always permitted the growth of such food plants as the rice cut-grass (*Leersia oryzoides*), spike rushes (*Eleocharis*), crow-foot sedges (*Cyperus*), and several species of smartweeds (*Polygonum*). It is possible, however, that aquatic food plants may again become reestablished in the water area. In some portions of the refuge lake good growths were noted during the summer of 1948.

THE HARTSTOWN SWAMP

That portion of the old Pymatuning Swamp extending from what is known as the Blair Bridge Road (Route #285), a distance of about three and a half miles south, to the vicinity of the village of Hartstown has been virtually unaffected by the creation of the Pymatuning



Photo Penna. Game Comm.

Reservoir. Over the greater part of this area conditions are the same today as they were two decades or more ago; but, within the past ten years there has been a marked increase in beaver activity. The dams which these animals have built have flooded a considerable acreage. The resultant killing of many of the forest trees will eventually permit more extensive growths of aquatic and marsh plants and bring about changes in the bird life as well. During the spring of 1947 I observed fairly large numbers of ducks in some of the woodlands which were inundated by beavers.

One of the most popular of local birding areas is the old canal reservoir site opposite the village of Hartstown. In the years following the abandonment of the canal, this reservoir basin became a cattail marsh. At one time part of it was fenced and used as a "muskrat farm", but this project was relatively short-lived. Some years ago it was acquired by a private duck hunting club; the water level was raised to facilitate access by boat; and, as a result, a large amount of the cattail and other marsh vegetation was drowned. There is a fairly good growth of submerged aquatic plants in this marshy area; and, particularly during the spring migration when the birds are not molested,



Section of old canal near Hartstown.

Photo by the author.

waterfowl and marsh birds occur there in some numbers. Its cattail stands formerly supported numbers of nesting Coots and Gallinules, and for several years there has been a fairly large breeding colony of Black Terns. There are several small ponds in the channel of the old canal between Hartstown and Shermansville. Their marshy borders afford nesting cover for Rails, Gallinules, and a few wild ducks.

Near the village of Hartstown there are three small natural lakes which probably represent the remaining remnants of the extensive post-glacial Pymatuning Lake. Dollar Lake, the smallest of the three, lies but a short distance to the east of Route 322 as one proceeds towards Conneaut Lake from Hartstown. It is well concealed by the surrounding swamp forest; and, except during the winter when the trees are leafless, it is invisible from the highway. Mud Lake, as it is designated on the United States Geological Survey map, lies but a short distance to the south of Dollar Lake and but a few rods to the east of Route 322. It is often, and much more appropriately, called Crystal Lake. A little less than a quarter of a mile to the south of the latter lake is the third of these small natural lakes which is variously known as Lower Lake, Mud Lake, Hidden Lake, or Long Lake. All three of these lakes are quite deep, with false shorelines built up by the ever encroaching vegetation. Between Crystal and Lower Lakes there is a small quaking bog with a growth of tamarack. In recent years when the water level of Lower Lake was raised several feet by the construction of beaver dams at its outlet and along Crooked Creek, many acres of the surrounding swamp forest were drowned and killed.

North of Hartstown is the site of a humus plant, the old excavations now partly filled with water, but the project has long since been abandoned. There were formerly a few farms in the area between the north and southbound tracks of the Bessemer Railroad, but these have all been abandoned. In 1946 the Pennsylvania Game Commission began to acquire lands in this area, and they have been designated as State Game Lands No. 214. These lands will be open to public hunting and trapping.

CONNEAUT LAKE AND CONNEAUT MARSH

Conneaut Lake lies approximately eight miles due east of Pymatuning. The town of Conneaut Lake lies at its southern extremity, and that of Conneaut Lake Park is along the northeastern shore. This lake, long one of the most popular resort areas in the northwestern part of the state, is a deep glacial lake with a maximum length of about two miles and a maximum width of about one mile. Formerly there were extensive marshes along the western and northern shores of the lake, but many of them have been filled in by real estate developments. The



Photo by the author.

Conneaut Lake Outlet Marsh rear Route 19.

original wilderness charm of this body of water has long since been erased by the construction of hotels, summer cottages, and an amusement park. It has long been famous as a fishing ground. It was formerly perhaps the most important stopping place for waterfowl in northwestern Pennsylvania, aside from Lake Erie, annually drawing hunters from points as far away as Pittsburgh.

Extending from the southern end of Conneaut Lake, a distance of some ten or twelve miles to the valley of French Creek, and bordering upon the sluggish stream which is known as the Conneaut Lake Outlet, is the Conneaut Marsh. Bordered by low hills, the marsh occupies most of the intervening valley. This marsh averages about a mile in width. It is difficult to travel, particularly during periods of high water, but it provides some of the very best waterfowl habitat to be found in the entire region. It is rich in plant species of definite value as waterfowl foods; and during the spring months, when most of the area is inundated, large numbers of waterfowl customarily rest and feed there. In 1946 the Pennsylvania Game Commission began a program of land acquisition in this marsh area with the establishment of State Game Lands No. 213.

SMITH MARSH

Smith Marsh lies a short distance to the west of Conneaut Lake, about midway between the lake and Meadville Junction. It occupies the fairly broad valley of a small stream which drains into Conneaut Lake. This stream was dammed by beavers, and the resultant rise in the water level drowned neighboring wooded areas. The impoundment has an excellent growth of aquatic vegetation, which attracts many species of waterfowl and marsh birds.

JUMBO WOODS

Some twelve miles to the north of the Pymatuning, on the borderline between Crawford and Erie Counties, lies what is popularly known as the Jumbo Woods. It derived its name from a large sawmill which was located there in former years and which was called the "Junbo Mill". A fairly extensive tract of swampy and semi-swampy woodland, it is ecologically similar to the woodlands which were found in the Pymatuning Swamp. This region is drained by tributaries of the West Branch of Conneaut Creek, to the northward into Lake Erie. There is a very low divide separating the waters flowing to the northward from those flowing southward into the Pymatuning. State Game Lands No. 101, comprising 3,372 acres, is located here in Crawford and Erie Counties. Most of the original timber has long since been removed, but some stands of fairly large second growth trees may be seen here.

Wood duck nesting box at edge of marsh.

Photo Penna. Game Comm.





Photo by the author.

Stump patches and border of swamp forest in Pymaunting Refuge.

ECOLOGICAL REVIEW OF THE REGION

WATER AREAS

The first white men who came into this portion of Crawford County found, aside from the numerous streams, only one large body of open water which was surrounded by an expanse of marsh. That was Conneaut Lake, the largest of the glacial born lakes still existing in Pennsylvania. Some six miles to the southwest of Conneaut, near the site of the present village of Hartstown, they might have seen three other small lakes which were merely of pond size. Extending northward and westward from the region of these lakes, in the form of a huge crescent, was a great expanse of mucky, wooded swamp, marsh, and quaking bog—the Pymatuning. Had they arrived upon the scene some twenty or thirty thousand years sooner, they might have seen a lake which was much larger than Conneaut. These three small areas of open water were the last vestiges of the extensive post-glacial Pymatuning Lake. For ages, the streams entering it had deposited their loads of sand, silt, and clay, gradually filling it in from the bottom. Plant life, crowding in from all sides, eventually eliminated the open

water, converting the area into a vast bog and swamp. It is in this old post-glacial lake basin that man has since created another lake, the sixteen thousand acre Pymatuning Lake. Eighteen times larger than Conneaut Lake, it is now the largest area of open water in the entire region.

The succession of plant associations beginning in such a water area, and leading up to its ultimate elimination (*hydrosere*), is well illustrated about the Hartstown lakes. Jennings (1944) has described the succession in these lakes, from open water to the shore as follows: (1) a Chara association at the bottom of the open lake basin; (2) a pondweed association of mostly submerged plants; (3) a water lily association of plants mostly with floating leaves; (4) a cattail and lizardtail marsh association; (5) a buttonbush-swamp rose—swamp dogwood thicket, often with some poison sumach; (6) a black ash-red maple forest, often with some white pine; (7) a white elm forest; and finally (8) the climax beech-sugar maple forest. As fast as the pioneer species of aquatic plants build the shore line farther out into the water, the plants of less wet habitats in turn establish themselves; thus, the succession leads to the formation of swamp forest and eventually to the climax forest.

While the deeper portions of the larger lakes are often frequented by migrating loons, grebes, mergansers, and diving ducks, it is the shallower water, with abundant plant life, that attracts most birds. The shallow bays, the small ponds, and even the temporary rain pools in marshy areas are thronged by the "pond ducks"—Mallards, Black Ducks, Pintails, Baldpates, and Blue-winged Teal—during the migration seasons. Wading birds, such as the Great Blue Heron and the American Egret, are commonly seen about the shallower shoreward waters where they obtain fish, frogs, and tadpoles. Gulls and terns obtain a portion of their food from the surface of water areas, and they are often seen coursing above the lakes, but the greater part of their food also is procured along the shores and in the shallower waters. During the summer months, many swallows are attracted to water areas where they obtain insects above the water's surface. In portions of the Pymatuning Refuge, at Hartstown, and at Conneaut Lake, there are rather extensive beds of spatterdock (*Nuphar advena*) which provide cover for many kinds of birds, particularly coots, gallinules, and ducks.

Generally by mid-December all of the water areas freeze over, even the larger lakes being ice-bound during normal winters until mid-March or shortly thereafter. The first migrating waterfowl to arrive in the spring usually find only small areas of open water where currents or springs tend to keep the water open except during the very coldest weather. Because of its greater depth and the presence of deep springs, the waters of Conneaut Lake generally do not freeze over as early as those of the Pymatuning; but they are ice-bound for several days longer in the spring of the year. From spring until late fall, both Conneaut

and Pymatuning Lakes are subject to considerable wave action, washing the shores more or less constantly. As a consequence, large areas of the shallow shoreward waters cannot support extensive beds of aquatic plants. In the main body of the Pymatuning, where water levels fluctuate markedly from season to season, there are relatively few aquatic waterfowl food plants.

MARSHES

True marsh areas, which are predominantly composed of herbaceous plants, such as cattail, sedges, and grasses, are very limited in the present region. The greater part of the regional marsh habitat is characterized by an infiltration of swamp shrubs such as the silky dogwood (*Cornus amomum*) red-osier (*Cornus stolonifera*), winterberry (*Ilex verticillata*), swamp rose (*Rosa palustris*), hoary alder (*Alnus incana*), poison sumach (*Rhus vernix*), and button-bush (*Cephalanthus occidentalis*). Occasionally even a scattering of small trees such as red maple (*Acer rubrum*), black ash (*Fraxinus nigra*), or white pine (*Pinus strobus*) may occur. Although the areas still maintain a certain open, and marsh-like aspect, it is evident that the swamp stage is fairly well advanced. A large portion of the old Pymatuning Swamp which borders the channel of the Shenango River between the Blair Bridge road and Hartstown is marsh of this type, although in part it is definitely a thicket of swamp shrubs. The same is true of a large portion of the Pymatuning Refuge area, Conneaut Marsh, and other regional marsh areas. Aside from typical marsh vegetation there are often fairly extensive growths of such plants as the arrow arum (*Peltandra virginica*), spatterdock (*Nuphar advena*), pickerel weed (*Pontederia*

Growth of spatterdock (*Nuphar advena*) in Pymatuning Refuge.

Photo by the author.





Photo by the author.

Although the areas still maintain a certain open, and marsh-like aspect, it is evident that the swamp stage is fairly well advanced.

cordata), skunk cabbage (*Symplocarpus foetidus*), marsh marigold (*Caltha palustris*), cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*).

Within the Pymatuning Refuge there are numerous "floating islands" ranging from a few square feet to a quarter of an acre or more in area. Actually they are portions of the old bog mat which was rather extensive in this locality before it was flooded. Each spring, when the water temperature rises sufficiently for bacterial action to generate gasses in these masses of peat and tree stumps, they become buoyant and float to the surface. When cold weather returns again in the late fall, bacteriological action ceases, and the "floating islands" sink again to the bottom of the lake. During the summer months, such floating peat masses usually become covered with marsh vegetation, particularly sedges. In the late summer, many of them are densely covered with the yellow blossoms of the bur marigold (*Bidens cernua*). Many species of birds frequent these "floating islands"; and, during the seasons of migration, many shorebirds and wild ducks may be seen about them. They are a favorite resort of the local summering ducks and Canada Geese, and are occasionally used by these birds as nesting sites.

Characteristic breeding birds of the local marsh areas are the Sora Rail, Virginia Rail, Red-winged Blackbird, Swamp Sparrow, Long-billed Marsh Wren, Alder Flycatcher, Yellow Warbler, and the Yellow-throat. In areas where there is more or less open water the Pied-billed Grebe, Florida Gallinule, and the Black Tern may be found nesting as well. The weathered snags of dead trees, which are very common in places where beavers have raised the water levels, are frequently

utilized by the Downy Woodpecker and the Black-capped Chickadee in excavating nesting sites; and in turn the deserted homes of these birds become favorite nesting places of the Tree Swallows.

BOGS

Relicts of the bog forest, which existed in the Pymatuning region during former years, are today confined to a few very small areas. Van Dersal (1933) stated that "Southern forms are now in nearly complete possession of the region; the bog flora except in an isolated instance is decidedly on the wane". For many years it was evident that the Canadian Life Zone areas in the region were receding. Sutton (1928) remarked that "Formerly Pymatuning probably had numerous forms of the Canadian Zone which are absent today; most of the typical Alleghenian forms are now present; but even during the years covered by our observations the Carolinian forms have become commoner. The changes in Pymatuning Swamp, due to drainage, lumbering, and various forms of reclamation, have caused the northern characteristics of the locality to partly disappear, and the avifauna of the Canadian Zone to disappear also. When once the northern forms recede, it seems they do not reappear. This does not, of course, mean that the geographical zones are changing; it means that the ecological conditions (perhaps including temperature to some extent) are changing." Perhaps the most extensive of the local tamarack-sphagnum-cranberry bog areas was that to the south and west of Shermansville, now flooded by the Upper or Linesville Lake, and within the present boundaries of the Pymatuning Refuge. Twenty years ago, Sutton remarked that much of the tamarack (*Larix laricina*) was in a dead or dying condition, and Netting and Van Dersal (1934) attributed the dying out of the trees to protracted drought. Today there are no sizeable bog areas left in the region; but the tamarack persists locally in parts of the swamp forest, a mere relic of the preceding bog sere or phase.



Photo Penna. Game Comm.



SWAMP FOREST

Surrounding the more open portions of the old Pymatuning Swamp and its tamarack-sphagnum-cranberry bogs was a deep, cool, dark, forest in which the hemlock (*Tsuga canadensis*) was the dominant species of tree. Associated with it were the white pine (*Pinus Strobus*), yellow birch (*Betula lutea*), red maple (*Acer rubrum*), cucumber tree (*Magnolia acuminata*), wild cherry (*Prunus serotina*), and occasionally other hardwoods. In its understory were such shrubs as the witch-hazel (*Hamamelis virginiana*), hobble-bush (*Viburnum alnifolium*), mountain holly (*Nemopanthus mucronata*), and the Canada yew (*Taxus canadensis*). Marsh marigold (*Caltha palustris*) and skunk cabbage (*Symplocarpus foetidus*) were prominent in the early spring and were later followed by a dense carpet of green hellebore (*Veratrum viride*), cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*). This hemlock swamp forest occupied the colder wet soils, and the fact that it contained many typical bog plants indicates that it is but a later stage in the bog sere leading up to the development of the climax forest. It was much more extensive in the Pymatuning region before the creation of the present lake, but remnants of this forest type persist in many parts of the region.

This forest, like the tamarack-sphagnum bog, had a definite northern aspect. In it were found, and for that matter are still found, birds which typically breed in the Canadian Zone. It is here that such species as the Grinnell's Water-thrush, Canada Warbler, Black-throated Green Warbler, Magnolia Warbler, and the Blackburnian Warbler are still found as breeding species. In former years, at least, the Slate-colored Junco, Red-breasted Nuthatch, Brown Creeper, and Winter Wren were known to have nested occasionally. Yet today, as Sutton pointed out some twenty years ago, typical representatives of the Canadian and Alleghenian Zones as well as certain species of Carolinian affinity can be found in one comparatively small area. Cardinals and Black-throated Green Warblers are frequently heard singing in the same tract of hemlock woodland, and the Tufted Titmouse and Grinnell's Water Thrush may inhabit the swamp forest.

Portions of the Pymatuning Swamp, which had less cold underground water and with more surface drainage running into them, were often occupied by a forest of hardwoods. The wetter sites were generally occupied by red maple and black ash (*Fraxinus nigra*), often with more or less poison sumach. Later in the succession, as the soil drainage improved, the American elm often predominated. Portions of this type of forest may still be found about the Pymatuning Lake and in the Hartstown swamp area. Thickets of such shrubs as the alder, meadow spiraea (*Spiraea alba*), button-bush, silky dogwood, common elder (*Sambucus canadensis*), and arrow-wood (*Viburnum dentatum*) are common in the understory. While many species of birds are commonly found in this swamp forest association, very few, if any, are strictly



Photo by the author.

Swamp forest between Refuge Area and Hartstown.

confined to it. The Blue-winged Warbler, Yellow Warbler, Northern Yellow-throat, Indigo Bunting, Song Sparrow, Catbird, and Alder Flycatcher are among the common species inhabiting the more open portions of this swamp forest association.

CLIMAX FOREST

The climax forest throughout the present region is that of the sugar maple-beech-yellow birch association. It is the type of forest which prevails on all of the better drained soils. In this region it intergrades with the hemlock swamp forest which it tends eventually to succeed. Associated with the dominant species are other hardwoods such as the tulip tree (*Liriodendron tulipifera*), cucumber tree (*Magnolia acuminata*), black cherry (*Prunus Serotina*), shagbark hickory (*Carya ovata*), red oak (*Quercus borealis* var. *maxima*), and white ash (*Fraxinus americana*). White pine (*Pinus strobus*) and hemlock are often frequent in the composition of this forest association, but they may often be lacking. In the older forests there are usually many openings left by the death or removal of some large trees; and, except in grazed woodlands, the understory of small trees and shrubs is moderately dense. Often the ground is well covered with wood fern (*Dryopteris spinulosum*), Christmas fern (*Polystichum acrostichoides*), and herbaceous flowering



plants such as sweet white violet (*Viola blanda*), round-leaved violet (*Viola rotundifolia*), dwarf ginseng (*Panax trifolium*), cucumber-root (*Medeola virginiana*), wild sarsaparilla (*Aralia nudicaulis*), false lily-of-the-valley (*Maianthemum canadense*), blue cohosh (*Caulophyllum thalictroides*), mayapple (*Podophyllum peltatum*), and Jack-in-the-pulpit (*Arisaema triphyllum*).

In many of these wooded areas there are lofty beeches in which the Red-shouldered Hawks often build their nests. The older trees often afford cavities in which the exquisite Wood Duck may lay her eggs. Snags often afford excellent nesting sites for the Flicker, and the Hairy and Downy Woodpeckers; and in turn the Crested Flycatcher, White-breasted Nuthatch, and Screech Owl may take over their old and abandoned excavations. The Scarlet Tanager, Wood Pewee, Wood Thrush, Redstart, and Red-eyed Vireo find acceptable nesting and feeding places at varied elevations in the crowns of the trees, while the Ovenbird and the Ruffed Grouse quite commonly nest on the forest floor.

THE EFFECTS OF MAN'S INFLUENCE

Nearly a century and a half have now elapsed since the influence of the white man was first felt in the Pymatuning region. In that short span of time he has effected many changes in the ecology of the area. Originally this was an extensively wooded region; and, with the exception of local open marshy areas, it was inhabited with forest dwelling species of mammals and birds. The axe, saw, plow, and fire soon broke the age-old and seemingly endless expanse of forest. Prairie-like expanses of grassy meadow and fields of cultivated crops gradually replaced the serried ranks of trees. Within a century, the landscape became a vastly different one from that which the Indian had known for centuries untold.

Huidekoper (1850) stated that man had extirpated the elk and the panther before the year 1846 and that the wolf, bear, and the beaver were then extinct, or virtually so. The seemingly endless numbers of Passenger Pigeons became but a memory before the advent of the twentieth century. Sometime between 1850 and 1900 the last of the native Wild Turkeys were killed in the present region. According to Sutton, their final refuge was the vast wooded wilderness of Pymatuning Swamp. Although the white man's influence was definitely inimical to many of the forest dwelling species of birds and mammals, it proved decidedly advantageous to many other species which were inhibited by the wooded country. Field inhabiting species of birds such as the Upland Plover, Bobolink, Meadowlark, Prairie Horned

Lark, and the Vesper, Savannah, and Henslow's Sparrows were certainly of rare and local occurrence; very probably they never even existed in the region during the pre-colonial period. Brown (1885) stated that the Bob White Quail was "not even seen or heard of" until the grain fields of the settlers provided them with a food supply, and Huidekoper said that the Cliff Swallows made their first appearance in the country about the year 1836.

The habits of many species of birds have quite evidently been modified since the advent of the white man's civilization. Originally the Chimney Swift nested in hollow trees in the forests, but today it virtually nests exclusively in the chimneys of man's own dwellings. Such adaptable species as the House Wren and the Robin are undoubtedly more numerous today than they were when they nested in the forests. They, and many other species of birds such as the Barn Swallow, Cliff Swallow, Purple Martin, Phoebe, and Bluebird have become thoroughly accustomed to living near man; either about his buildings or in nesting boxes which man has erected specifically for their use. The Baltimore Oriole and the Warbling Vireo once nested in the more open parts of the forest, but today they are certainly far more common about the orchards and shade trees than anywhere in the wilds. Man, too, has been directly responsible for the introduction of foreign species such as the English Sparrow and the European Starling. These have so well adapted themselves that they now must be considered as major pests, and as serious competitors of certain of our native species of birds. Cliff Swallows, for instance, have all but disappeared from the region since the English Sparrow became common. On the other hand, the introduced Ring-necked Pheasant must now be considered the number one upland game bird of the region.

Although the Pymatuning region is still predominantly agricultural, the peak of the acreage under cultivation evidently passed some three or four decades ago. Today there are many hundreds, if not thousands, of acres of farmland which are reverting to brush and forest land. Less than a half century ago many acres of wet land which were not suitable for the cultivated field crops were devoted to the commercial production of hay, but now much of this land is no longer mowed. The abandoned farm fields are soon taken over by blackberries and raspberries (*Rubus*), hawthorns (*Crataegus*), and other shrubs, affording a most acceptable habitat for such species of birds as the Field Sparrow, Yellow-breasted Chat, Brown Thrasher, and Catbird. The species of birds which inhabit the grassy fields, however, soon dis-

appear. Two decades ago, Sutton quoted Mr. Kirkpatrick as saying that the Meadowlark was much more numerous in the region forty years prior to that time than it was even then.

The production of such field crops as corn, oats, wheat, and buckwheat affords an accessory food supply for many species of birds. Red-winged Blackbirds often ravage cornfields when the ears are still soft and in the "milk stage". Various species of wild ducks sometimes help themselves to buckwheat before it is harvested, and many of the seed-eating birds glean the waste grain and weed seeds from the harvested fields during the fall and winter months. Tender green shoots of winter wheat are eagerly eaten by Canada Geese in the early spring, but they seldom cause excessive damage by such foraging activity. The population of small rodents which inhabit the grain fields invariably attract the larger predatory hawks and owls to such areas.

Nature herself, in the course of time, would have brought about certain changes in the region's ecology, although it is highly improbable that any but the climax forest would have gained ascendancy. It was known for many years that the Canadian Zone relict flora and fauna at the Pymatuning Swamp, and in other local areas, was slowly but definitely being superseded by more southern forms of Alleghenian or even of Carolinian affinity. Man has merely hastened the natural succession by cutting of the forests, drainage of wet lands, and the cultivation of the soil. As the remnants of a northern flora and fauna were destroyed, their places were taken by the more southern forms. Netting and Van Dersal (1934) stated that "Beyond all question, since the first white settler, no other influence has changed the ecological picture in so wide-spread a manner as will the coming reservoir". They predicted that, among other things, the "presence of such a large body of water will have a stabilizing effect upon the temperature, and will probably increase the annual number of frostless days". It is still too soon to make any statement based upon meteorological data; but there is little evidence, thus far, that the presence of the lake has been responsible for any major change in the local weather. It has not resulted in the elimination of all of the boreal relict species, although it has markedly limited their distribution in the present region and probably thereby hastened the natural succession of these forms by more southern elements. It has resulted in an immeasurably enriched avifauna; particularly through the addition of the many species of wild waterfowl, marsh, and shore birds which were either rare or unrecorded under the pre-existing ecological conditions.

CLIMATE

Official records have been kept of the precipitation for twenty or more years at Linesville, Westford, and at Penn Line, in Crawford County, Pennsylvania. Temperature data for a corresponding period of time are not available, however, and such data given in Table I are based upon records which were made between April 1940 and March 1948, at the Penn Line station, by Mr. J. G. Crumb and his sister Miss Retta Crumb. Certain data from two of the long established weather stations nearest to the present region were given in the 1941 Yearbook of the United States Department of Agriculture. These are the stations located at Saegertown, Crawford County, and Greenville, Mercer County. Both of these stations are within twenty miles of the boundaries of the region covered by this report.

SPRING

The normal daily mean temperature for the months of March, April, and May is 41.9°F . For the month of March it was 31.2° , or slightly below freezing. March as a rule is generally cold and blustery, but there are occasional, and sometimes prolonged, mild periods. The lowest temperature recorded was -21° , but subzero temperatures are not frequent. The highest temperature was 75° . March weather is often decidedly changeable, and freezes and thaws often alternate with suddenness. Snowstorms of blizzard proportions are not uncommon; and, as a rule, the lakes remain icebound until the middle or the latter part

Ice formations along the lake shore make a winter wonderland of the area.

Photo Penna. Game Comm.



of the month. April brings a gradual warming up, with the daily mean temperature rising to 40°. The lowest temperature which was recorded during this month was 8° and the highest was 84°. Most of the precipitation this month comes in the form of rain, but snowfalls are not uncommon with one or more snowstorms experienced each year. In May the normal daily mean temperature rises to 54.5°. The lowest temperature recorded during the month was 16° and the highest was 90°. Occasionally there are snows during the early part of the month. The average date of the last killing frost is about May 20, but heavy frosts often occur as late as the end of the month. Normal precipitation for these three months at Penn Line is 9.38 inches. During the spring of 1940, 1942, 1944, and 1947 it exceeded 13 inches, with a high of 15.32 inches in 1942. High water in the marsh areas during the late spring and early summer, particularly when the rise is very sudden, is often very destructive to the nests of breeding birds. Both the springs of 1946 and 1947 were abnormally wet and the water levels often rose suddenly. In the months of May and June 14.56 inches of rain fell in 1946 and 12.26 inches in 1947, as compared with the normal of 6.84 inches. Messrs. Fricke and Harrison reported that they found many nests of rails, gallinules, and other birds destroyed in the regional marshes during the spring of 1947.

SUMMER

The normal daily mean temperature for the months of June, July, and August is 66.1°. The highest normal daily mean temperature, 67.7°, was recorded in July. It was also the only month of the year in which the temperature never dropped below 32°, the low for the month being 34°. The normal daily minimum temperature was 53.1°. June has a normal daily mean temperature of 64.7° and the lowest temperature recorded was 26°. In August the normal daily mean is 65.9°, but August 1947 had a daily mean of 71.6° as compared with the mean of

Growth of marsh vegetation along border of lake in Pymatuning Refuge.

Photo by the author.



64.9° for July of that year. Temperatures in excess of 90° are not common and usually of short duration. The highest temperatures recorded were 98° in June and July, and 96° in August. Light frosts may be expected during the last week of August and traces of frost have been recorded as early as August 21. The normal precipitation at Penn Line for the three summer months is 10.85 inches. The wettest summer between 1940 and 1947 was that of 1942 when 16.70 inches of rainfall was recorded, 10.05 inches of it during the month of July. The driest summer was that of 1944 with a recorded rainfall of 8.78 inches. Summer precipitation is mostly in the form of thundershowers. Severe storms are rather infrequent.

FALL

The normal daily mean temperature for the months of September, October, and November is 47.5°. September has a normal daily mean of 59.4°. Killing frost was experienced as early as September 12, 1943; but the average date is much later, being near October 2. Light to heavy frosts are frequent, particularly in the latter part of the month. The lowest temperature recorded was 21° on September 29, 1942. Occasional temperatures as high as 91° were recorded during the early part of the month. October has a normal daily mean temperature of 47.1°. Subfreezing temperatures and heavy to killing frosts may normally be expected early in the month and the first snow of the season is frequently experienced. Often, however, there are prolonged warm spells in this month with temperatures of 80° or higher; and the cold weather is generally of a rather short duration. In November the normal daily mean drops to 35.9°, and minimum temperatures of from 8° to 17° were recorded during each of the several years. The normal precipitation for the three months at Penn Line is 10.73 inches. September with 4.42 inches has the highest normal precipitation of any month of the year; but between 1940 and 1947 the recorded rainfall ranged between 1.58 inches in 1943 to 8.28 inches in 1945, with an average of only 3.08 for the eight year period. The precipitation has often been deficient during these fall months in recent years; in 1940 there were but 6.55 inches and in 1947 only 6.41 inches of rainfall.

WINTER

The normal daily mean temperature for the months of December, January, and February is 21.3°. February is normally the coldest of the winter months with a normal daily mean of only 19.8°, but subzero temperatures have been recorded from December to March. The normal daily mean temperature for the month of December is 24.0°, and the recorded temperature range for the month is from -21° to 63°. January has a normal daily mean of 20.2°. Temperatures of 0° and lower are common during both January and February, but the periods of extreme cold generally last only a few days at a time. January 1945 was the coldest month recorded between 1941 and 1948, having a daily mean

temperature of only 12.0°. There were seventeen days during that month on which the minimum temperature was 0° or lower, minimum temperatures during the month averaging only .8 of a degree. The lowest temperature recorded during the same period of years was -28° on January 31, 1948. That month was the second coldest month recorded with a daily mean temperature of 13.0° and minimum temperatures averaging only 2.1°. There were fourteen days with minimum recordings of 0° or below. Much of the winter precipitation falls in the form of snow, but the accumulated snowfall seldom exceeds a foot in depth. The winter of 1944-45 had an exceptionally heavy snowfall; and by the early part of February between four to six feet of snow had accumulated on the ground, with drifts in places up to fifteen or twenty feet in depth. The normal precipitation for the three months at Penn Line is 7.72 inches, the lowest of any of the seasons. Normally the lakes and streams freeze over about mid-December and remain frozen until sometime in March, but occasionally thaws in midwinter may result in partial or even complete disappearance of ice. During the average winter ice up to twenty inches in thickness is formed on Pymatuning and Conneaut Lakes.

TABLE I
CLIMATOLOGICAL DATA FOR THE PYMATUNING REGION

Annual mean temperature	44.2°
Normal daily mean temperature for December, January, and February	21.3°
Normal daily mean temperature for March, April, and May	41.9°
Normal daily mean temperature for June, July, and August	66.1°
Normal daily mean temperature for September, October, and November	47.5°
Normal daily maximum temperature for December, January, and February	30.4°
Normal daily maximum temperature for June, July, and August ..	80.3°
Normal daily minimum temperature for December, January, and February	12.3°
Normal daily minimum temperature for June, July, and August ..	51.9°
Highest temperature recorded at Penn Line, 1940-1947	98.0°
Highest temperature recorded at Greenville*	104.0°
Lowest temperature recorded at Penn Line, 1940-1948	-28.0°
Lowest temperature recorded at Greenville*	-27.0°
Annual mean precipitation in inches at Penn Line*	38.68
Annual mean precipitation in inches at Greenville*	40.51
Average date of last killing frost in spring (Greenville)*	May 20
Average date of first killing frost in fall (Greenville)*	October 2
Average length of growing season at Greenville	135 days
Prevailing wind	SW.
Percentage of possible sunshine in December, January, and February*	30
Percentage of possible sunshine in June, July, and August* ..	60-70

* Indicates data taken from Yearbook of the United States Department of Agriculture for 1941. All other data compiled from records furnished by Mr. J. Glenn Crumb and based upon monthly records from April 1940 to March 1948, inclusive, taken at Penn Line, Crawford County, Pennsylvania.



Mallard and young.

Photo Penna. Game Comm.

BREEDING AND SUMMERING BIRDS

A list of the one hundred and twenty-six species of birds which are definitely known to have nested in the Pymatuning Region since 1930 is presented in Table II. Those marked with an asterisk (*) have nested sporadically or very rarely. Most of the remaining species have nested with regularity, although many are by no means common members of the regional avifauna.

During the summer seasons individuals of several other species, mainly water and shore birds, have frequently been seen in the region; but there have been no indications that they breed here. Numbers of American Egrets regularly visit this region during the summer months after the breeding season, although it has occasionally been observed as early as the month of May, and on one occasion in mid-April. Double-crested Cormorants have been observed during the month of July, but they were all evidently wandering juvenile individuals. Common Terns, and occasionally an individual or two of the Caspian Tern, were often seen about Pymatuning Lake. The Ring-billed Gull regularly summers in fair numbers. All of these, however, seem to be non-breeding birds or merely summer wanderers. Occasionally individuals or small groups of several species of ducks have been seen during the normal breeding season, but in most instances they appear to be only "loafing" and not actually engaged in nesting.

Certain of the shorebirds, notably the Greater and Lesser Yellow-legs, the Solitary Sandpiper, and the Dowitcher have been regularly observed during the month of July. Inasmuch as they are rarely observed in the region between mid-May and the latter part of June, the appearance of scattered individuals in July indicates that they are early transients en route south. As a matter of fact their numbers gradually increase until they are often quite common before mid-August.

TABLE II
BIRDS KNOWN TO HAVE NESTED IN THE PYMATUNING REGION
BETWEEN THE YEARS 1930 AND 1948

Pied-billed Grebe	Prairie Horned Lark
Great Blue Heron	Tree Swallow
Eastern Green Heron	Bank Swallow
Black-crowned Night Heron	Rough-winged Swallow
American Bittern	Barn Swallow
Eastern Least Bittern	Northern Cliff Swallow*
Canada Goose	Purple Martin
Mallard	Northern Blue Jay
Black Duck	Eastern Crow
Gadwall	Black-capped Chickadee
American Pintail	Tufted Titmouse
Green-winged Teal*	White-breasted Nuthatch
Blue-winged Teal	Ohio House Wren
Shoveller*	Prairie Marsh Wren
Wood Duck	Short-billed Marsh Wren
Redhead*	Catbird
Ring-necked Duck*	Brown Thrasher
Ruddy Duck*	Eastern Robin
Hooded Merganser*	Wood Thrush
Turkey Vulture	Veery
Cooper's Hawk	Eastern Bluebird
Eastern Red-tailed Hawk	Cedar Waxwing
Northern Red-shouldered Hawk	European Starling
Northern Bald Eagle	Yellow-throated Vireo
Marsh Hawk	Red-eyed Vireo
Eastern Sparrow Hawk	Eastern Warbling Vireo
Eastern Ruffed Grouse	Blue-winged Warbler
Bob White	Nashville Warbler*
Ring-necked Pheasant	Eastern Yellow Warbler
King Rail*	Magnolia Warbler
Virginia Rail	Black-throated Blue Warbler*
Sora Rail	Black-throated Green Warbler
Florida Gallinule	Blackburnian Warbler
American Coot	Ovenbird
Killdeer	Grinnell's Water-thrush
American Woodcock	Northern Yellow-throat
Wilson's Snipe	Yellow-breasted Chat
Upland Plover	Canada Warbler
Spotted Sandpiper	American Redstart
Black Tern	English Sparrow
Eastern Mourning Dove	Bobolink
Yellow-billed Cuckoo	Eastern Meadowlark
Black-billed Cuckoo	Eastern Red-wing
Eastern Screech Owl	Orchard Oriole
Great Horned Owl	Baltimore Oriole
Northern Barred Owl	Bronzed Grackle
Short-eared Owl*	Eastern Cowbird
Barn Owl*	Scarlet Tanager
Eastern Nighthawk	Eastern Cardinal
Chimney Swift	Rose-breasted Grosbeak
Ruby-throated Hummingbird	Indigo Bunting
Eastern Belted Kingfisher	Northern Pine Siskin*
Northern Flicker	Eastern Goldfinch
Northern Pileated Woodpecker	Red-eyed Towhee
Red-headed Woodpecker	Eastern Savannah Sparrow
Eastern Hairy Woodpecker	Eastern Grasshopper Sparrow
Northern Downy Woodpecker	Western Henslow's Sparrow
Eastern Kingbird	Eastern Vesper Sparrow
Northern Crested Flycatcher	Eastern Chipping Sparrow
Eastern Phoebe	Eastern Field Sparrow
Acadian Flycatcher	White-throated Sparrow
Alder Flycatcher	Swamp Sparrow
Eastern Wood Pewee	Mississippi Song Sparrow

WINTER BIRDS

Table III presents a list of the sixty species of birds which have been recorded from the Pymatuning region between December 15 and February 15 of the years since 1935. Those species which are not of common or regular occurrence, or which have been only rarely and occasionally recorded from the region, have been indicated with an asterisk (*).

The winter birds may be conveniently classified as either *permanent residents* or *winter visitants*. The "permanent residents" are those species which are found in the region throughout the year. While many of the birds in this classification are undoubtedly true residents the year around it, is entirely possible that others are not actually residents; and the presence of the species throughout the year is due to the influx of individuals breeding farther to the north, while the locally breeding population is wintering farther to the south. Such a shift in the population can, of course, only be ascertained by the banding of a large number of birds, and this has not been undertaken in the present region. The Black-capped Chickadee, Tufted Titmouse, White-breasted Nuthatch, Cardinal, and the Downy and Hairy Woodpeckers are among the most common of the birds in this class. The "winter visitants" are those species which breed in regions to the north and migrate southward, spending the winter season in the present region. The Tree Sparrow and the Slate-colored Junco are the commonest of the local "winter visitants". Snow Buntings seem to be fairly regularly present, often in immense numbers, and the Common Redpoll has been recorded on several occasions in recent years. The Winter Wren, Brown

A resident colony of Canada Geese can frequently be observed on the lake in winter.

Photo Penna. Game Comm.



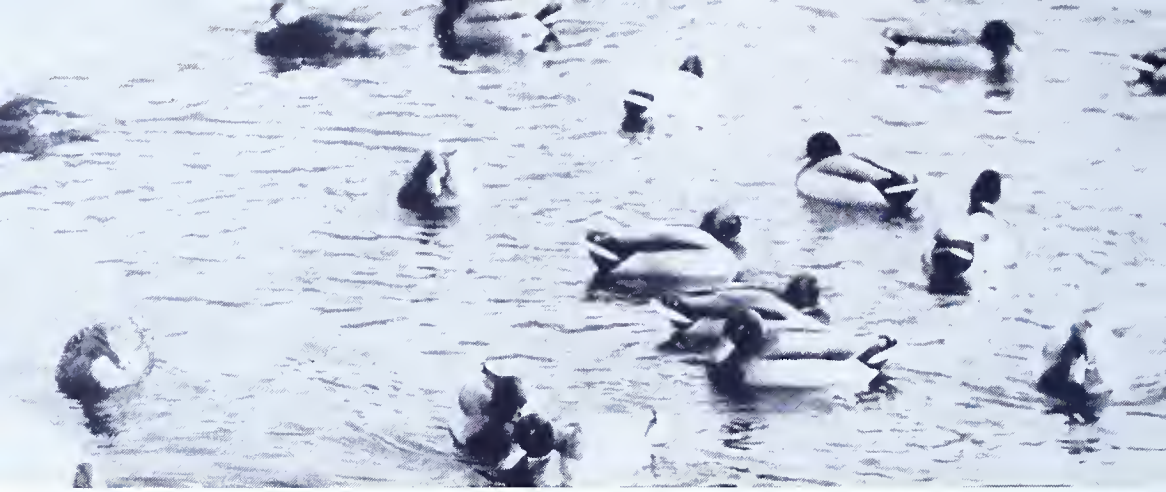


Photo Penna. Game Comm.

Mallards are a common sight on the Lake.

Creeper, Golden-crowned Kinglet, and the Red-breasted Nuthatch are all regular "winter visitants"; but they are seldom very common.

Some of the "winter visitant" species are extremely erratic in their occurrence. During certain "invasion years" they may be quite common, or even extremely abundant, but there are intervals of many years between their presence. The Red and White-winged Crossbills, the Pine Grosbeak, the Evening Grosbeak, and the Snowy Owl are examples of such "winter visitants". There was a notable invasion of crossbills during the winter of 1940-41; and of both Snowy Owls and Evening Grosbeaks during the winter of 1945-46.

The Loon, Pied-billed Grebe, Shoveller, Wood Duck, and Lesser Scaup are seldom actually "winter visitants". In most instances their occurrence later than December 15 may be explained by the lingering of a few belated migrants, or possibly of crippled birds which were unable to complete the southward journey. Some individuals, or even small flocks of birds which are common as "summer residents" occasionally pass the winter in the region. Thus, in recent years, there have been records of the Robin, Bluebird, Meadowlark, Cedar Waxwing, and Mourning Dove during the winter seasons. The latter species, in fact, is becoming quite common during the winter months.

In winter, many of the birds are extremely sociable with those of other species. Often in a tract of woodland one encounters a flock of birds, travelling as a group through the trees and undergrowth. Such an aggregation is very often made up of Black-capped Chickadees, Tufted Titmice, Golden-crowned Kinglets, and perhaps a few Brown Creepers, Downy Woodpeckers, or White-breasted Nuthatches. In a single thicket it is not unusual to find a number of Tree Sparrows, Slate-colored Juncos, and a few Song Sparrows or Cardinals.

Among the buteonine hawks only the Red-tail is of regular occurrence during the winter season. The Sparrow Hawk is occasionally seen in the open territory, and the Marsh Hawk sometimes is present in small numbers. A few Bald Eagles rather regularly remain about the Pymatuning Lake. Crows, as a rule, are seldom seen in the region during the winter months, but they become rather common soon after the middle of February when the winter roosts break up.

TABLE III

SPECIES OF BIRDS RECORDED BETWEEN DECEMBER 15
AND FEBRUARY 15

Common Loon*	Prairie Horned Lark
Pied-billed Grebe*	Northern Blue Jay
Mallard	Eastern Crow
Black Duck	Black-capped Chickadee
Shoveller*	Tufted Titmouse
Wood Duck*	White-breasted Nuthatch
Lesser Scaup*	Red-breasted Nuthatch
American Golden-eye	Brown Creeper
American Merganser	Eastern Winter Wren
Cooper's Hawk	Eastern Robin*
Eastern Red-tailed Hawk	Eastern Bluebird*
American Rough-legged Hawk*	Eastern Golden-crowned Kinglet
Northern Bald Eagle	Cedar Waxwing
Marsh Hawk	European Starling
Eastern Sparrow Hawk	English Sparrow
Eastern Ruffed Grouse	Eastern Meadowlark*
Bob White	Eastern Cardinal
Ring-necked Pheasant	Eastern Evening Grosbeak*
American Coot	Eastern Purple Finch
Herring Gull	Canadian Pine Grosbeak*
Eastern Mourning Dove	Common Redpoll
Eastern Screech Owl	Northern Pine Siskin*
Great Horned Owl	Eastern Goldfinch
Snowy Owl*	Red Crossbill*
Northern Barred Owl	White-winged Crossbill*
Northern Flicker	Slate-colored Junco
Northern Pileated Woodpecker	Eastern Tree Sparrow
Red-bellied Woodpecker	Mississippi Song Sparrow
Eastern Hairy Woodpecker	Eastern Snow Bunting
Northern Downy Woodpecker	Canada Goose

Cedar Waxwing and young.

Photo by Hal. H. Harrison.

TABLE IV

DISTRIBUTION OF THE SPECIES OF BIRDS IN THE PYMATUNING REGION THROUGHOUT THE YEAR

	J	F	M	A	M	J	J	A	S	O	N	D
Common Loon												
Horned Grebe												
Pied-billed Grebe												
Double-crested Cormorant												
Great Blue Heron												
American Egret												
Eastern Green Heron												
Black-crowned Night Heron												
American Bittern												
Least Bittern												
Whistling Swan												
Canada Goose												
Common Mallard												
Black Duck												
Gadwall												
Baldpate												
American Pintail												
Green-winged Teal												
Blue-winged Teal												
Shoveller												
Wood Duck												
Redhead												
Canvasback												
Lesser Scaup Duck												
American Golden-eye												
Bufflehead												
Old Squaw												
White-winged Scoter												
Ruddy Duck												
Hooded Merganser												
American Merganser												
Red-breasted Merganser												
Turkey Vulture												
Cooper's Hawk												
Eastern Red-tailed Hawk												
Northern Red-shouldered Hawk												
Northern Bald Eagle												
Marsh Hawk												
Osprey												
Duck Hawk												
Eastern Sparrow Hawk												
Eastern Ruffed Grouse												
Ring-necked Pheasant												
Virginia Rail												
Sora												
Florida Gallinule												
American Coot												
Semipalmated Plover												
Killdeer												
Black-bellied Plover												
Ruddy Turnstone												
American Woodcock												
Wilson's Snipe												



TABLE IV (continued)

	J	F	M	A	M	J	J	A	S	O	N	D
Upland Plover												
Spotted Sandpiper												
Eastern Solitary Sandpiper												
Greater Yellow-legs												
Lesser Yellow-legs												
Pectoral Sandpiper												
Least Sandpiper												
Red-backed Sandpiper												
Eastern Dowitcher												
Stilt Sandpiper												
Semipalmated Sandpiper												
Sanderling												
Herring Gull												
Ring-billed Gull												
Bonaparte's Gull												
Common Tern												
Caspian Tern												
Black Tern												
Eastern Mourning Dove												
Yellow-billed Cuckoo												
Black-billed Cuckoo												
Eastern Screech Owl												
Great Horned Owl												
Snowy Owl												
Northern Barred Owl												
Eastern Nighthawk												
Chimney Swift												
Ruby-throated Hummingbird												
Eastern Belted Kingfisher												
Northern Flicker												
Northern Pileated Woodpecker												
Red-headed Woodpecker												
Yellow-bellied Sapsucker												
Eastern Hairy Woodpecker												
Northern Downy Woodpecker												
Eastern Kingbird												
Northern Crested Flycatcher												
Eastern Phoebe												
Acadian Flycatcher												
Alder Flycatcher												
Eastern Wood Pewee												
Prairie Horned Lark												
Tree Swallow												
Bank Swallow												
Rough-winged Swallow												
Barn Swallow												
Northern Cliff Swallow												
Purple Martin												
Northern Blue Jay												
Eastern Crow												
Black-capped Chickadee												
Tufted Titmouse												
White-breasted Nuthatch												
Red-breasted Nuthatch												

TABLE IV (continued)

	J	F	M	A	M	J	J	A	S	O	N	D
Brown Creeper												
Ohio House Wren												
Eastern Winter Wren												
Prairie Marsh Wren												
Short-billed Marsh Wren												
Catbird												
Brown Thrasher												
Eastern Robin												
Wood Thrush												
Eastern Hermit Thrush												
Olive-backed Thrush												
Veery												
Eastern Bluebird												
Eastern Golden-crowned Kinglet												
Eastern Ruby-crowned Kinglet												
American Pipit												
Cedar Waxwing												
European Starling												
Yellow-throated Vireo												
Blue-headed Vireo												
Red-eyed Vireo												
Eastern Warbling Vireo												
Black and White Warbler												
Blue-winged Warbler												
Tennessee Warbler												
Nashville Warbler												
Eastern Yellow Warbler												
Magnolia Warbler												
Cape May Warbler												
Black-throated Blue Warbler												
Myrtle Warbler												
Black-throated Green Warbler												
Blackburnian Warbler												
Chestnut-sided Warbler												
Bay-breasted Warbler												
Black-poll Warbler												
Western Palm Warbler												
Ovenbird												
Grinnell's Water Thrush												
Northern Yellow-throat												
Yellow-breasted Chat												
Wilson's Warbler												
Canada Warbler												
American Redstart												
English Sparrow												
Bobolink												
Eastern Meadowlark												
Eastern Red-wing												
Orchard Oriole												
Baltimore Oriole												
Rusty Blackbird												
Bronzed Grackle												
Eastern Cowbird												

TABLE IV (continued)

	J	F	M	A	M	J	J	A	S	O	N	D
Scarlet Tanager												
Eastern Cardinal												
Rose-breasted Grosbeak												
Indigo Bunting												
Eastern Evening Grosbeak												
Eastern Purple Finch												
Common Redpoll												
Northern Pine Siskin												
Eastern Goldfinch												
Eastern Red Crossbill												
White-winged Crossbill												
Red-eyed Towhee												
Eastern Savannah Sparrow												
Eastern Grasshopper Sparrow												
Western Henslow's Sparrow												
Eastern Vesper Sparrow												
Slate-colored Junco												
Eastern Tree Sparrow												
Eastern Chipping Sparrow												
Eastern Field Sparrow												
White-crowned Sparrow												
White-throated Sparrow												
Eastern Fox Sparrow												
Lincoln's Sparrow												
Swamp Sparrow												
Mississippi Song Sparrow												
Eastern Snow Bunting												

There is nothing more inspiring than waterfowl on the wing.

Photo by U. S. Fish and Wildlife Service.



WATERFOWL BANDED AT PYMATUNING LAKE

Between March 24 and May 5, 1938, and March 19 and May 16, 1939, a total of 976 birds were banded at Pymatuning Lake by Mr. John M. Anderson, under the supervision of Dr. Lawrence E. Hicks who was at that time the leader of the Ohio Cooperative Wildlife Research Unit. Banding stations were operated within the Pymatuning Refuge with the permission of the Pennsylvania Game Commission. The distribution of banded birds by species, together with the number of returns, is as follows:

<i>Species</i>	<i>No. Banded</i>	<i>No. of Returns</i>
Mallard	177	23
Black Duck	280	40
Baldpate	29	2
Pintail	8	1
Wood Duck	72	1
Blue-winged Teal	2	0
Green-winged Teal	3	0
Lesser Scaup	170	16
Greater Scaup	3	0
Ring-necked Duck	22	4
Redhead	12	1
Canvasback	1	1
American Coot	197	10

It is interesting to note that not a single bird, out of the 366 individuals banded during the spring of 1938, was recaptured at the local banding stations during the spring of 1939.

Tables V and VI present the data regarding the locally banded ducks and coots. This information has been shown graphically for the Mallard and Black Duck (Fig. 2) and for the Lesser Scaup (Fig. 3). Inasmuch as Anderson's banding at the Pymatuning took place only during the spring migration season, the individuals which were banded were, for the most part, transients. No data is available at the present time which would indicate the migratory movements of locally-reared birds.

During the fall of 1948 and 1949 Carl R. Warren trapped and banded 1,369 ducks. Practically all were blacks and mallards. Early reports indicate that some of them were taken in some southeastern states.

The available returns on the Lesser Scaups banded at the Pymatuning indicate that this species follows a route from the northwestern part of the continent, southeastward across the region of the Great Lakes, and across the mountains to the Atlantic coast (Fig. 3). If sufficient data were available, it seems likely that a similar course could be charted for other diving ducks such as the Redhead and the Canvasback. On the other hand it is difficult to chart the course taken by the Mallards and



Photo by Hal. H. Harrison.

Banding a wild duck.

the Black Ducks as there is an obvious and widespread dispersal of returns both to the north and to the south of the point of banding, with birds subsequently reported along both the Atlantic and the Mississippi flyways (Fig. 2).

The most distant returns from the point of banding were in the case of a male Baldpate (No. 38-636518), which was banded at the Pymatuning on March 25, 1938, and subsequently reported from Santo Domingo, 1,700 miles to the southeast, in April, 1942; and of a male Lesser Scaup (No. 37-629549) which was reported from Lac La Biche, in the province of Alberta, Canada, an equal distance to the northwest, on September 12 of the same year that it was banded. Three of the ducks which were banded during April 1939 were reported as late as December 1945, six years and eight months after they were banded. One of these was a female Mallard which was taken in Indiana; the other two were male Black Ducks which were taken in Tennessee and in South Carolina. Only one duck taken during the banding operations had previously been banded elsewhere; on March 31, 1938, a male Ring-necked Duck (No. 38-626825) was taken which had been banded at Georgetown, South Carolina, on December 26, 1937.

TABLE V
RECORD OF LONG DISTANCE RETURNS OF DUCKS AND COOTS
BANDED AT PYMATUNING LAKE

<i>Species</i>	<i>Sex</i>	<i>Date Banded</i>	<i>Location of Retake</i>	<i>Date Retaken</i>	<i>Band Number</i>
Mallard	Female	Apr. 3, 1938	Violet, La.	Dec. 3, 1944	38-711471
Mallard	Male	Apr. 6, 1938	Minneapolis, Minn.	Nov. 11, 1943	38-636579
Mallard	Male	Apr. 6, 1938	Medon Lake, Sask.	May 4, 1940	38-636591
Mallard	Male	Apr. 9, 1938	Ashland City, Tenn.	Dec. 4, 1938	38-713012
Mallard	Male	Apr. 26, 1938	Chillecothe, Ill.	Oct. 28, 1941	38-636387
Mallard	Male	Mar. 20, 1939	Georgetown, S. C.	Dec. 1939	38-636280
Mallard	Male	Mar. 22, 1939	Iriquois, Ont.	Oct. 9, 1939	38-713208
Mallard	Male	Mar. 25, 1939	Sevierville, Tenn.	Feb. 10, 1940	38-713226
Mallard	Female	Mar. 30, 1939	Hamilton, Ont.	Nov. 9, 1942	38-636416
Mallard	Male	Mar. 31, 1939	Zittaw, Wis.	Nov. 2, 1939	38-636421
Mallard	Male	Apr. 2, 1939	Mitchellton, Sask.	Sept. 2, 1939	38-713238
Mallard	Male	Apr. 4, 1939	Roberts Co., S. D.	Nov. 8, 1939	38-636451
Mallard	Male	Apr. 9, 1939	Livingstone Co., Mich.	fall, 1942	38-636465
Mallard	Male	Apr. 10, 1939	Oldtown, Md.	Dec. 16, 1939	38-713266
Mallard	Female	Apr. 11, 1939	Windsor, Ont.	Oct. 1939	38-636475
Mallard	Male	Apr. 17, 1939	Ft. Wayne, Ind.	Dec. 21, 1945	38-636496
Mallard	Male	Apr. 23, 1939	Monroe, Mich.	Oct. 21, 1939	37-629513
Mallard	Male	Apr. 26, 1939	St. James Is., Fla.	Nov. 24, 1940	37-629580
Mallard	Male	May 1, 1939	Gillet, Ark.	Nov. 18, 1940	38-644116
Mallard	Male	May 3, 1939	Marshal, Wis.	Nov. 6, 1940	38-644188
Black Duck	?	Mar. 25, 1938	Montreal, Que.	Dec. 11, 1938	38-711402
Black Duck	Male	Mar. 28, 1938	Sturgis, Mich.	Oct. 7, 1938	38-711421
Black Duck	Male	Mar. 31, 1938	Suffolk Co., L. I., N. Y.	Nov. 26, 1939	38-711452
Black Duck	Male	Apr. 1, 1938	Ford Island, Wis.	Oct. 14, 1938	38-711458
Black Duck	Female	Apr. 2, 1938	Darien, Ga.	Dec. 26, 1938	38-711468
Black Duck	Female	Apr. 3, 1938	Lake St. John, Que.	Oct. 1938	38-636553
Black Duck	Male	Apr. 3, 1938	Pecan, Miss.	fall, 1940	38-711473
Black Duck	Male	Apr. 3, 1938	Lake St. Clair, Mich.	Oct. 12, 1938	38-711483
Black Duck	Male	Apr. 3, 1938	Mattamuskeet, N. C.	Dec. 1940	38-711488
Black Duck	Female	Apr. 4, 1938	St. Helena Sound, S. C.	fall, 1940	38-636565
Black Duck	Male	Apr. 9, 1938	Elkins, W. Va.	Oct. 23, 1938	38-636321
Black Duck	Female	Apr. 9, 1938	Muskegon, Mich.	Nov. 5, 1939	38-636324
Black Duck	Male	Apr. 9, 1938	Churchill, Man.	Oct. 21, 1939	38-713007
Black Duck	Male	Apr. 9, 1938	Georgetown, S. C.	Mar. 13, 1944	38-713009
Black Duck	Male	Apr. 13, 1938	Edisto River, S. C.	Nov. 11, 1940	38-713024
Black Duck	Male	Apr. 18, 1938	Coldwater, Ont.	Sept. 16, 1940	38-636348
Black Duck	Male	Apr. 18, 1938	Randolph, Va.	Dec. 4, 1940	38-636349
Black Duck	Male	Mar. 20, 1939	North Bay, Ont.	Sept. 9, 1942	38-636228
Black Duck	Male	Mar. 20, 1939	Aberdeen, Md.	Nov. 3, 1941	38-636252
Black Duck	Male	Mar. 21, 1939	Norwich, Ont.	fall, 1939	38-644243
Black Duck	Male	Mar. 25, 1939	Long Point, Ont.	Oct. 3, 1940	38-713225
Black Duck	Male	Apr. 2, 1939	Almonte, Ont.	May 11, 1943	38-636404
Black Duck	Female	Apr. 2, 1939	Eagle River, Wis.	fall, 1939	38-636425
Black Duck	Male	Apr. 3, 1939	Point Rowan, Ont.	Nov. 15, 1940	38-713242
Black Duck	Male	Apr. 6, 1939	Emory, Va.	Dec. 1942	38-713250
Black Duck	Male	Apr. 8, 1939	Wonder Lake, Ill.	Nov. 15, 1939	38-636458
Black Duck	Male	Apr. 8, 1939	65 mi. W. Chicago, Ill.	Nov. 15, 1939	38-636459
Black Duck	Male	Apr. 9, 1939	Moose Factory, Ont.	July 1942	38-713257
Black Duck	Male	Apr. 9, 1939	Georgetown, S. C.	Nov. 1939	38-713259
Black Duck	Male	Apr. 9, 1939	Louisville, Ky.	Dec. 19, 1945	38-713262
Black Duck	Male	Apr. 11, 1939	Reelfoot Lake, Tenn.	Nov. 6, 1940	38-713270
Black Duck	Male	Apr. 12, 1939	Georgetown, S. C.	Dec. 1945	38-713280
Lesser Scaup	Male	Apr. 3, 1939	Sauk Center, Minn.	Nov. 3, 1942	38-636446
Lesser Scaup	Male	Apr. 24, 1939	Belmont Bay, Md.	Nov. 22, 1939	37-629553
Lesser Scaup	Male	Apr. 24, 1939	Lac La Biche, Alb.	Sept. 12, 1939	37-629549
Lesser Scaup	Male	Apr. 25, 1939	East Bay, Md.	fall, 1940	37-629576
Lesser Scaup	Female	Apr. 25, 1939	Presque Isle Co., Mich.	Oct. 1, 1939	37-629577
Lesser Scaup	Female	May 1, 1939	Rockwood, Minn.	Sept. 22, 1939	38-644122
Lesser Scaup	Male	May 1, 1939	Cocoa, Fla.	Dec. 5, 1939	38-644125
Lesser Scaup	Male	May 1, 1939	Allen Parish, La.	Dec. 1939	38-644140

TABLE V (Continued)

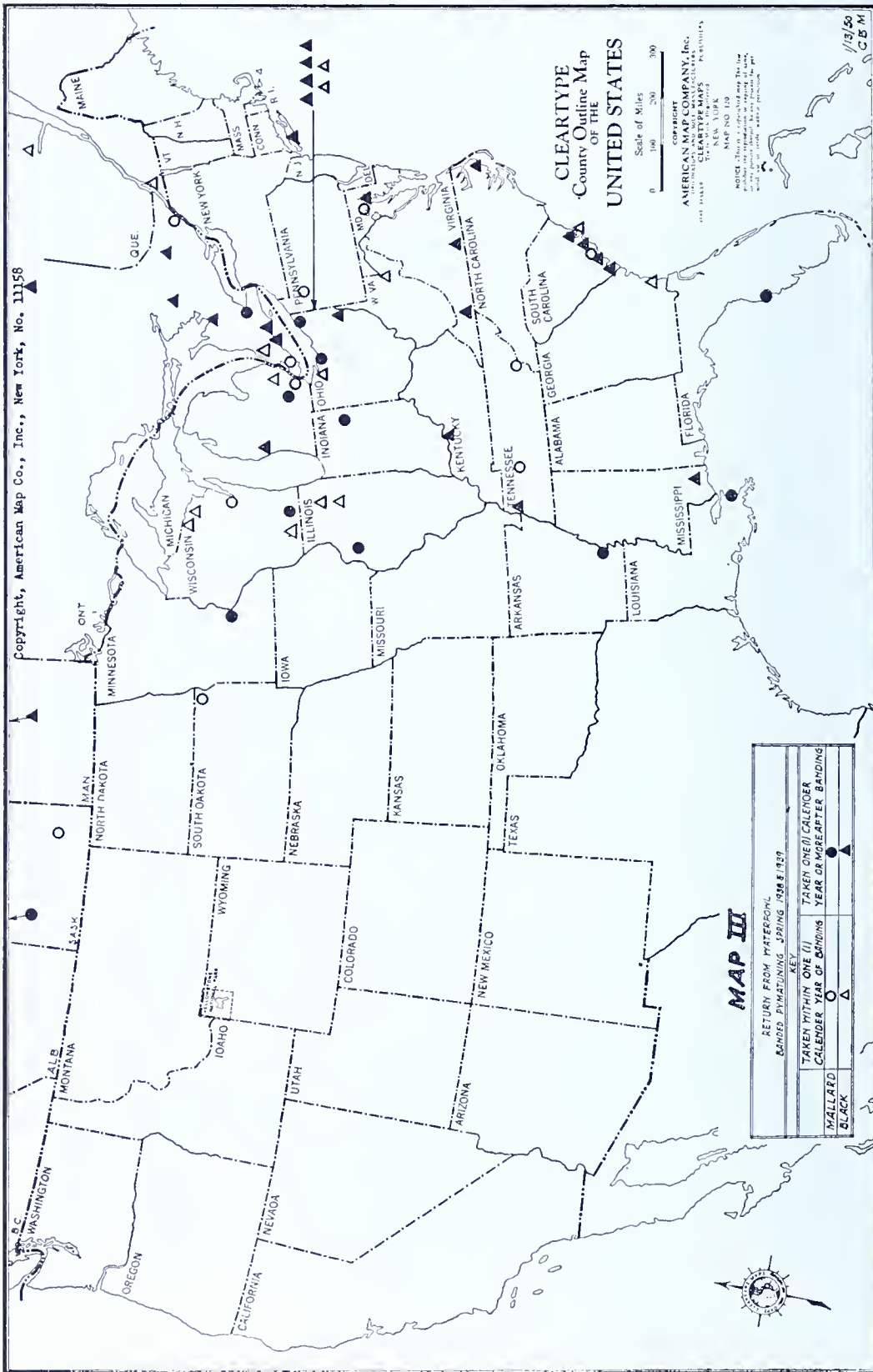
RECORD OF LONG DISTANCE RETURNS OF DUCKS AND COOTS
BANDED AT PYMATUNING LAKE (Continued)

<i>Species</i>	<i>Sex</i>	<i>Date Banded</i>	<i>Location of Retake</i>	<i>Date Retaken</i>	<i>Band Number</i>
Lesser Scaup	Male	May 1, 1939	Sanford, Fla.	Dec. 29, 1940	38-644152
Lesser Scaup	Female	May 2, 1939	Leeds Co., Ont.	Oct. 15, 1939	38-644147
Lesser Scaup	Male	May 2, 1939	Buffalo, N. Y.	Oct. 16, 1941	38-644165
Lesser Scaup	Female	May 2, 1939	Lake Ida, Minn.	Oct. 27, 1940	38-644169
Lesser Scaup	Female	May 2, 1939	Green Bay, Wis.	Oct. 1942	38-644178
Lesser Scaup	Male	May 8, 1939	Chestertown, Md.	fall, 1940	37-629711
Lesser Scaup	Male	May 8, 1939	Seminole Co., Fla.	Dec. 9, 1939	37-629708
Lesser Scaup	Male	May 2, 1939	Loon Lake, Manitoba	May 17, 1939	38-644175
Baldpate	Male	Mar. 25, 1938	Santo Domingo	April 1942	38-636518
Baldpate	Male	Mar. 20, 1939	Sachigo River, Ont.	fall, 1940	38-644203
Wood Duck	Male	Apr. 25, 1938	Sheffield, Ala.	Jan. 25, 1940	38-636378
Ring-necked Duck	Male	Apr. 11, 1938	Knotts Island, N. C.	Nov. 25, 1938	38-636326
Ring-necked Duck	Female	Apr. 12, 1938	St. Williams, Ont.	Oct. 29, 1938	38-636333
Ring-necked Duck	Male	Apr. 2, 1939	Orillia, Ont.	May 1, 1939	38-636430
Ring-necked Duck	Male	Mar. 25, 1939	Caredo, W. Va.	Nov. 1939	38-644288
Redhead	Male	Mar. 31, 1938	Clinton, Iowa	Nov. 7, 1940	38-636542
Canvasback	Male	Apr. 25, 1939	Detroit River, Mich.	Oct. 25, 1939	37-629572
Coot	?	Mar. 23, 1938	Hustiford, Wis.	Oct. 13, 1938	38-523601
Coot	?	Mar. 25, 1938	Hennepin Co., Minn.	Oct. 1, 1939	38-523609
Coot	?	Apr. 4, 1938	Orange Lake, Fla.	Jan. 29, 1939	38-636562
Coot	?	Apr. 18, 1938	Valleyfield, Que.	Sept. 19, 1938	38-636351
Coot	?	Mar. 19, 1939	Bow String River, Minn.	Oct. 1, 1939	38-636214
Coot	?	Mar. 20, 1939	West Bend, Wis.	Oct. 1, 1939	38-636229
Coot	?	Mar. 20, 1939	Lake-of-the-Woods, Ont.	Sept. 15, 1941	38-636242
Coot	?	Mar. 20, 1939	Waterford, Wis.	Oct. 1, 1939	38-636249

TABLE VI

RECORD OF LOCAL AND NEARBY RETURNS OF DUCKS
BANDED AT PYMATUNING LAKE

<i>Species</i>	<i>Sex</i>	<i>Date Banded</i>	<i>Location of Retake</i>	<i>Date Retaken</i>	<i>Band Number</i>
Mallard	Female	Mar. 20, 1939	Ashtabula, Ohio	Nov. 11, 1940	38-636287
Mallard	Female	Mar. 26, 1939	Erie Co., Ohio	Nov. 1942	38-644292
Black Duck	Male	Apr. 2, 1938	Conneautville, Pa.	Dec. 11, 1938	38-711465
Black Duck	?	Apr. 21, 1938	Hartstown, Pa.	Oct. 18, 1941	38-713039
Black Duck	Female	Apr. 26, 1938	Geneva, Pa.	Dec. 17, 1944	38-636383
Black Duck	Female	Mar. 23, 1939	Pymatuning Region	Nov. 21, 1940	38-644284
Black Duck	Female	Mar. 23, 1939	East Harbor, Ohio	Nov. 1939	38-713227
Black Duck	Female	Apr. 18, 1939	Pettis Swamp, Crawford Co., Pa.	Nov. 17, 1941	37-629568
Black Duck	Female	Apr. 18, 1939	Pymatuning Region	Dec. 1, 1939	38-636499
Pintail	Male	Mar. 23, 1938	Bono, Ohio	Nov. 8, 1938	38-636515



MAP III

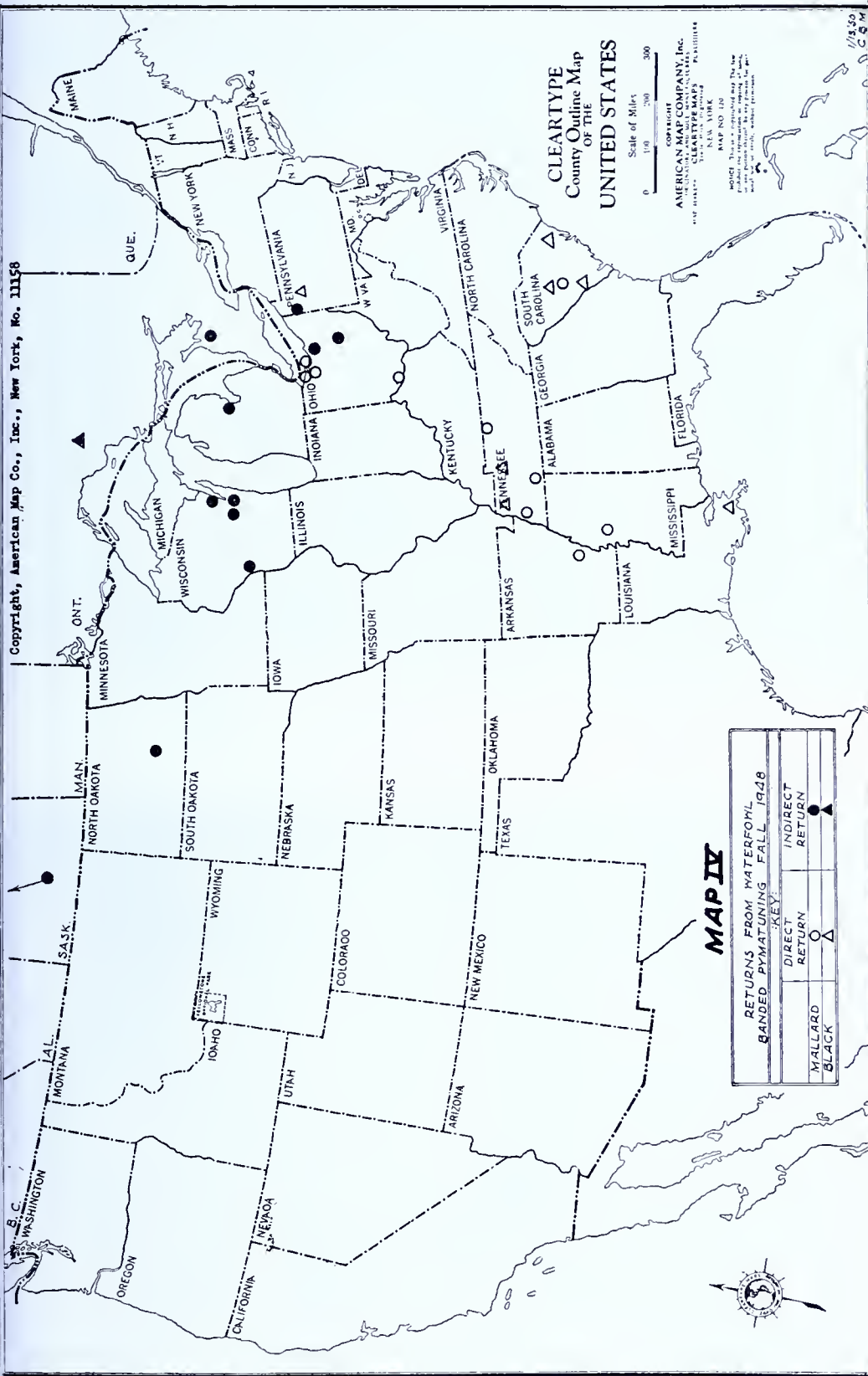
RETURN FROM MATERIAL			
BANDS PYGMY SHREW, SPRING 1938 & 1939			
KEY			
TAKEN WITHIN ONE (1)	TAKEN ONE/CALENDAR		
CALENDAR YEAR OF BANDING	YEAR OF MAREFTER BANDING		
MALLARD		○	△
BLACK		●	▲

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NOTICE: This is a reproduction of the map of the United States showing the distribution of the banded pygmy shrew, as taken by the U.S. Fish and Wildlife Service, 1938 & 1939.



11/13/50
C.B.H.



CLEARTYPE
County Outline Map
of the
UNITED STATES

Scale of Miles
0 100 200 300

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MAP IV

RETURNS FROM WATERFOWL BANDS PYMATUNING FALL 1948			
KEY:			
DIRECT	INDIRECT	RETURN	
MALLARD			
BLACK			





Above—Pied-billed Grebe (adult) ; Below—An immature.

Photos by Masłowski and Goodpaster.



A Systematic Account of the Species of Birds Recorded From the Pymatuning Region

COMMON LOON

Gavia immer immer (Brünnich)

Sutton (1928) gave the status of the Common Loon as that of a "regular but never common migrant". Most of his records pertained to birds at Conneaut Lake. Within recent years, particularly since the creation of the Pymatuning Reservoir, the species has become a regular and fairly common transient, usually somewhat more numerous during the spring than during the fall migrations. Loons occur most commonly on the deeper parts of the main lake although they are frequently seen on the Upper Lake in the refuge area. For the past several years, it has not been unusual to see as many as forty or fifty individuals along the Espyville-Andover causeway during the height of the spring migration. They arrive in the region soon after the ice goes off the lakes. Although usually silent during the migration, they occasionally offer a sample of their wild, wierd, wavering call.

The earliest spring record for the region is that of a bird seen at Hartstown on March 28, 1932 (Seiple). The latest date for its occurrence in spring is that of May 30, 1923, when one was seen on Lower Lake at Hartstown (Sutton). The majority of our spring records are for the month of April; the peak of the migration occurring between April 5 and April 15. Fall records usually pertain to solitary individuals. On November 11, 1941, I observed a group of ten birds near the Linesville spillway on October 12, 1940 (Fricke). There are numerous records for the latter part of October and the month of November. Occasionally an individual or two has been seen during the early part of December. On December 10, 1941, I saw a solitary bird on the refuge area near the Linesville spillway. The individual which I observed in a stretch of open water off the Espyville-Andover causeway on January 3, 1941, although it appeared to be in good physical condition, may possibly have been a crippled bird which was not able to complete its southward journey.

RED-THROATED LOON

Gavia stellata (Pontoppidan)

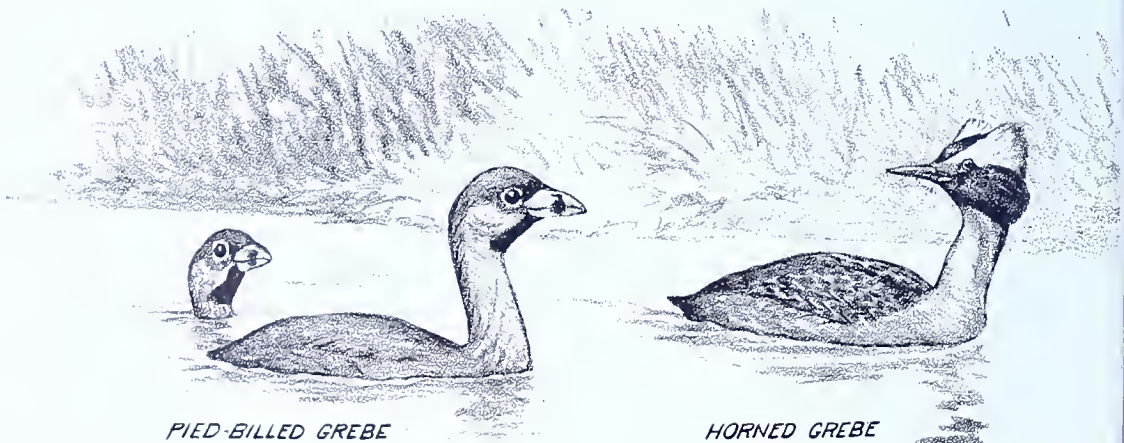
The Red-throated Loon must be considered a very rare and irregular transient in the Pymatuning region. Sutton (1928) regarded it as a rare and irregular migrant on Conneaut Lake and stated that it was most common during the fall. Its status has not changed materially since that time. I have never seen this species anywhere in the region. Skaggs (1938) records having observed one on the lake "near Linesville" on April 20, 1938.

HOLBOELL'S GREBE ***Colymbus grisegana holboellii* (Reinhardt)**

There are very few records for the Holboell's Grebe in the Pymatuning region. Sutton recorded the species from Crystal Lake, Hartstown, on May 13, 1922. On April 24, 1941, Mr. Oudette reported having seen two birds within the Pymatuning State Game Refuge. On March 27, 1943 a single bird was observed by a group of bird students off the Espyville-Andover causeway (Harrison, 1943). According to Mr. Harrison, Oudette told him the bird had been present then for about two weeks. The species must be regarded as a very rare and irregular migrant. Mr. R. M. Sickles tells me that he observed one during April, 1948.

HORNED GREBE ***Colymbus auritus* Linnaeus**

Sutton (1928) regarded the Horned Grebe as a "regular migrant, sometimes occurring in large flocks on Conneaut Lake". He likewise mentions its occurrence on the small lakes at Hartstown. The species now occurs as a regular and fairly common migrant on the Pymatuning. The earliest spring record is that of a bird seen "near Linesville" on March 28, 1937 (Skaggs). The majority of the spring records pertain to the early part of April. Sutton recorded the collection of a male specimen at Crystal Lake, Hartstown, on May 8, 1922 and stated that individuals of this species were seen on Conneaut Lake as late as June 6 during the year of 1925. The Horned Grebe seems to be somewhat more common during the fall migration than it is in the spring. My earliest fall record is that of October 9, 1940 when I saw a solitary bird in the refuge area near the mouth of Linesville Creek. The latest date on which I have observed the species was December 1, 1941 when I observed several birds in a small bay area near the Linesville spillway. On November 18, 1940, I observed in excess of thirty birds off the Espyville-Andover causeway. A few days later, on November 22, I saw several in the refuge area.



PIED-BILLED GREBE

HORNED GREBE

PIED-BILLED GREBE *Podilymbus podiceps podiceps* (Linnaeus)

Sutton (1928) gave the status of the Pied-billed Grebe in the Pymatuning region as that of a "fairly common migrant, not so numerous apparently as the preceding species and certainly not so often seen in large flocks." He stated that "it doubtless occasionally nests in the locality—but we have no certain breeding records for the Pymatuning region at the present time". Since that time the species has been found breeding in several marsh areas in the region. Mr. Stanley J. Seiple was apparently the first to make the discovery when he located an adult bird with three young at Hartstown on July 21, 1931. It was very common as a breeding species in the Pymatuning Refuge during the years which immediately followed the inundation of that area, much more so than it is at the present time. It has been known to breed also in the Smith Marsh area, as well as about Conneaut Lake. Undoubtedly it nests elsewhere in the region.

The nest of this species resembles a mass of floating vegetation. On May 29, 1934, Mr. Fricke collected a set of six eggs which seems to be the average number. On June 24, 1941, I saw two adult birds with three young in Smith Marsh, the young appearing nearly full-grown. Mr. Oudette reported seeing an adult bird with five very small young ones, which he estimated were not more than a week old, in the Pymatuning refuge on August 15, 1940. This must have represented a belated renesting attempt although it may possibly have been a second brood.

The Pied-billed Grebe arrives in this region soon after the lakes open in the spring. It is often observed during the month of March although the mass migration does not take place until early in April. Oudette reported seeing one at the Pymatuning on March 11, 1939. On March 13, 1946 I observed one at a pool of open water near the Linesville spillway. During the months of August and September numbers of these grebes frequent the spatterdock beds in the refuge area. The latest fall record which I have is that of December 21, 1941, when I observed a bird along the Espyville-Andover causeway.

WHITE PELICAN

***Pelecanus erythrorhynchos* Gmelin**

There are several records from the Pymatuning region for this rare straggler. Sutton (1928) gave the following records from Conneaut Lake: one shot on October 1, 1851 by Mr. John Porter of Meadville and two adults which were shot on October 15, 1898 by Dr. Douglas Stewart of Pittsburgh and Mr. William Foust of Conneaut Lake. Both of these specimens are now in the Carnegie Museum. He also cites the killing of a specimen in the Pymatuning Swamp during May, 1905 by a man whose identity is not known. Since that time there has been one other record, that of a bird seen on the Pymatuning Lake, near Linesville, from June 19 until June 23, 1935 by Mr. Oudette.

DOUBLE-CRESTED CORMORANT ***Phalacrocorax auritus auritus***
(Lesson)

Sutton (1928) considered the Double-crested Cormorant as "a rare and irregular transient visitant which has been recorded only at Conneaut Lake". He cited spring records there during 1913, 1925, and 1926 and fall records during 1884, 1891, and 1909. Since 1936 it has been recorded regularly in the spring months at the Pymatuning. There are also several records of its occurrence during the summer and fall. Mr. Fricke first saw the cormorant in this area on June 20, 1936. The earliest spring record for the region is April 15, 1926 (Sutton). On April 19, 1947, I saw two fine-plumaged adult birds about the shore of the main lake near Linesville. There are several April and May records for the region. On May 12, 1946 probably as many as forty to fifty birds were present about the submerged stump patches in the upper portion of the main portion of the reservoir near Linesville.

Mr. Raymond M. Sickles saw two birds near the refuge headquarters on Ford Island on the evening of July 25, 1940 and the following morning he saw one. On August 15, 1940; and again on August 20. I observed three birds in the old corduroy road section of the refuge. On September 20, I saw eight birds between the corduroy road and Ford Island. The following October 23 I watched a flock of nine birds come from the refuge area and fly down the main body of the lake at 4:45 P.M. On October 13, 1941, I again saw two birds in the refuge area. The latest fall record of which I have any knowledge is that of the bird which I observed along the Espyville-Andover causeway on November 9, 1940. An individual in full adult plumage was taken in a net set by Fish Commission employees in an artificial lake on the Keystone Ordnance property near Geneva, May 20, 1947.

GREAT WHITE HERON ***Ardea occidentalis Audubon***

Early in May of 1938, Mr. R. L. Fricke observed a large, white heron on the Pymatuning Lake near Linesville. On May 14, Mr. B. L. Oudette succeeded in collecting it. This specimen now reposes in the Pymatuning Museum. On October 21, of the same year, Mr. C. Gordon Kriebel obtained colored motion pictures of another individual which was identical in every respect with the specimen collected by Mr. Oudette. Both the mounted specimen and the film record were examined by Dr. H. C. Oberholser who declared that they were undoubtedly the Great White Heron. This rare bird is normally confined to the extreme southern tip of Florida and the Keys, the northernmost previous record being an individual taken near Durham, North Carolina, on July 2, 1926. Dr. Oberholser explained that this extraordinary occurrence may have resulted from an unusual northward wandering, perhaps due to stress of storm, but Todd (1940) is inclined to discount the possibility of two individuals having wandered to a point so remote from the home grounds.

Todd stated that "it is possible that after all the Great Blue Heron is actually a dichromatic species, with its white phase localized in southern Florida but appearing locally and fortuitously in other parts of its range". This opinion is now shared by other ornithologists, but the exact taxonomic status must apparently await further studies before conclusions may be drawn. In the meantime, no additional records of Great White Herons have occurred anywhere in the region.



Photo by U. S. Fish and Wildlife Service.

Great Blue Herons seem to preside over the area with the dignity of judges.

GREAT BLUE HERON

***Ardea herodias herodias* Linnaeus**

Sutton regarded the Great Blue Heron in the Pymatuning region as a regular and fairly common migrant but not present in great numbers as a summer resident. On May 4, 1922, he observed three huge, sprawling nests in the high birches on Cherry Island, at the southern extremity of Lower Lake, Hartstown, which he believed to be vestiges of a former colony. He further stated that no nests with eggs had been found to the best of his knowledge.

The first record of an active heron rookery in the present region appears to be that of Dr. Lawrence E. Hicks, who in June of 1931 discovered one being used in the Jumbo Woods of Beaver Township, Crawford County, close to the Ohio-Pennsylvania state line. Dr. Hicks stated that the natives told him the colony had been in existence for approximately fifteen years. In the spring of 1932 he estimated that it contained 21 occupied nests. The following year there were 34 nests. The birds abandoned this area sometime between 1935 and 1940 following the cutting of the timber. In 1933 Mr. J. G. Crumb discovered a rookery along the border of Pymatuning Swamp, not far from his home in Conneaut Township, Crawford County. Todd (1940) stated that during the following year a small colony, consisting of seven or eight nests, was established in the swamp about two miles north of Hartstown. In 1935 the birds built in a tract of swamp woods about a mile to the southwest of Shermansville. This colony was well within the boundary of the Pymatuning Refuge which was established in the fall of that year. In the spring of 1938, Mr. Oudette, the refuge keeper, estimated that the colony contained in excess of fifty pairs of nesting birds.

Tragedy, however, has constantly stalked the heron rookeries of the region. The one discovered by Mr. Crumb in 1933 was apparently flourishing, increasing to over forty nests during the nesting season of 1938; but early in the following spring it was suddenly and mysteriously abandoned. The one near Hartstown had a similar fate. Then, in the late spring of 1939, after the young had been hatched, the rookery in the Pymatuning Refuge was likewise deserted. In the spring of 1940

Nesting colony of Great Blue Herons.

Photo by James Brown.



the birds nested successfully in the wooded swamp along the east side of the Shenango channel, about midway between the Blair Bridge road and Hartstown. They returned in the spring of 1941, and on July 8 of that year Mr. Arnold J. Schaumann and I investigated conditions in the colony. As far as we could ascertain, between thirty and forty nests were in use at that time. The colony flourished for a few years, but it was likewise abandoned. The cause of the sudden desertion of all of these local rookeries, usually in the spring after the birds had laid their eggs and in some cases even hatched their young, has never been satisfactorily explained. There is certainly no evidence that it was due to molestation by humans. Suspicion has been attached to possible depredations by Crows, Turkey Vultures, and by Raccoons; but thus far nobody has proved conclusively that they are the factors involved.

On August 14, 1949, Messrs. John F. Mehner and James Ross witnessed an attack by four or more turkey vultures on a Great Blue Heron. This incident took place at about 7:30 P.M. in the Ohio Rookery. The heron was on a nest, and apparently brooding in spite of the late date. It was the only heron seen in the rookery. After a struggle which lasted about five minutes the vultures were driven off. The heron did not leave the nest.

There is one large rookery in Ashtabula County, Ohio, not far from the shore of Pymatuning Lake, which Mr. Crumb tells me has been in existence for several years. On April 23, 1946, I visited this rookery with Messrs. Crumb and Raymond Sickles. We estimated that it contained in the neighborhood of two hundred nests. I visited this colony on several occasions during the nesting season of 1947, during which approximately the same number of nests were occupied. On May 14, 1947, Game Protector Clair W. Dinger of Albion showed me a rookery which he had recently discovered in the Jumbo Woods. It was located in a tract of swamp woods just outside of the boundary of State Game Lands No. 101. Approximately thirty nests were in use at the time of our visit.

The first Great Blue Herons arrive in the region during the latter part of March, but often they are not present in any great number much before the tenth of April. In 1946 the first birds were seen on March 21. Although the majority of the birds leave before the advent of freezing temperatures, they are occasionally seen well into the month of December. Mr. Oudette reported seeing one in the refuge area on December 19, 1940; and Sutton recorded one as having been seen by Mr. George Wilson of Conneaut Lake Park on January 12, 1926. Mr. Crumb thinks that a few individuals may remain in the region all winter.

The birds begin to nest soon after their arrival from the south, usually about the middle of April. I have seen the birds sitting on their nests, and apparently incubating, as early as April 18. We found many fragments of egg shells in the Ohio rookery on our visit of April 23, 1946. Three or four eggs usually constitute a full set; but Mr.

Fricke found a set of five eggs in a nest at the Hartstown rookery on May 4, 1934. The young remain in the nests throughout most of the month of July. On August 6, 1940, I observed many still in the nest at one of the local rookeries.

Throughout the summer months these herons are commonly seen feeding along the shore of Pymatuning Lake. I have often seen them wade out into water that was belly deep, on which occasions they often appeared to be swimming. Mr. Fricke told me that on one occasion he observed the birds feeding on the wing. These birds were flying against a wind, barely a few feet above the water's surface; and, when a fish was sighted they seemed to dive, thrusting their heads and necks into the water in an attempt to spear their finny prey.

AMERICAN EGRET

***Casmerodius albus egretta* (Gmelin)**

Prior to the creation of Pymatuning Lake, the American Egret was only an occasional mid-summer visitor in the region; but since that time it has become a regular and fairly common species. Sutton (1928) mentioned three birds seen at the southern end of Conneaut Lake by Mr. Welshons between August 15 and September 12, 1925. Seiple (1931) recorded occasional birds in the Hartstown area; where, on August 5, 1933, he observed twenty-five individuals (Christy, 1934). During the month of August, 1938, an estimated one hundred and fifty birds were present at Pymatuning Lake. On August 26, 1938, Trimble (1940) counted forty-five individuals flying to roost on a little island in the Upper Lake.

The earliest date on which it has ever been recorded in spring was on April 15, 1941, in the Hartstown marsh. This individual was wearing the nuptial plumes, an extremely uncommon occurrence in the present region (Grimm, 1941b). Later, on June 11, 1945, Mr. Arthur Swoger observed another individual in nuptial plumage in the refuge area near Linesville. Other early spring records for the species are as follows: May 14, 1934, near Linesville (Fricke); May 11, 1935, near Linesville (Arthur); May 17, 1935, near Linesville (Trimble); May 16, 1940, near Linesville (Sickles); and on May 26, 1941, I saw one in the refuge area. There has not been a subsequent invasion comparable to that of 1938, but the species has been present every summer in variable numbers. At evening the birds customarily roost on a small wooded island in the Upper Lake about a quarter of a mile east of Ford Island. On August 20, 1940, I counted nineteen birds roosting there at dusk. Ordinarily the Egrets leave the region before the advent of frosty nights, but I saw one in a small bay near the Linesville spillway on October 1, 1940; and another remained in a bay near the fish hatchery until October 24, 1941.

Mr. John M. Mehner observed thirty-four birds in the refuge area on the morning of September 4, 1949.

SNOWY EGRET

***Leucophoyx thula thula* (Molina)**

Sutton (1928) makes no reference to the occurrence of this species in the Pymatuning region. Seiple recorded a single individual at Hartstown on several occasions between August 1 and September 10, 1931. Skaggs observed one on September 27 and again on October 4, 1936. Fricke found several birds in this same area on August 25, 1937 and on September 13 he collected two males. Ira B. Boggs reported two individuals on September 4, 1937 and Roger T. Peterson saw two on the following September 18. Trimble (1940) states that on August 26, 1938 she observed four birds on the refuge and was told by Mr. Oudette that he had counted eleven birds at one time during that particular month. As far as I know, there have been few subsequent records of the Snowy Egret in the Pymatuning area. I did not see a single individual anywhere during my extensive field work during the summer of 1940 and 1941. Apparently the species is an occasional visitant during the summer months, not a regular summer visitant as is the American Egret.

On August 29, 1949, Messrs. John F. Mehner and James Ross observed two birds in company with several American Egrets at the Andover end of the causeway.

LITTLE BLUE HERON

***Florida caerulea caerulea* (Linnaeus)**

Like the Snowy Egret, this species is an accidental wanderer which reaches this region occasionally during the summer months. Sutton (1928) reported a single bird seen on the Lower Lake, Hartstown, on August 29, 1925. Seiple (1931) recorded his observation of two individuals at Hartstown between August 1 and September 10, 1930. Hicks reported having seen one in the Pymatuning region during August, 1935. Skaggs (1937) reported one on the lake near Linesville on September 27, 1936; and in the same locality Trimble (1940) saw three birds in flight on August 26, 1938. Between August 13 and September 4, 1941, I frequently saw an individual between the mouth of Linesville Creek and the fish hatchery. The bird did not seem to associate with the American Egrets, and at dusk it would fly off to roost by itself in a different part of the refuge area than where the larger egrets were roosting. All of the individuals which have been reported from the area have been in the immature white plumage.

Mr. John F. Mehner observed an immature bird in the Shellito area on July 12, 1949.

EASTERN GREEN HERON

***Butorides virescens virescens*
(Linnaeus)**

The regional status of this species has apparently not changed appreciably since the time of Sutton's report on the birds of the region (1928). He considered it "abundant as a migrant and summer resi-

dent, not only at the larger bodies of water but along the smallest streams". That is approximately the status of the bird in this region at the present time.

The Green Heron arrives shortly after mid-April, usually becoming quite common by the end of the month. The earliest date on which it has been recorded in the spring was on April 14, 1945 (Alice Greeves, et al.). My earliest spring observation is that of April 19, 1941, when Mr. Fricke and I saw two individuals in the Hartstown marsh. Summer records are, of course, exceedingly numerous. The latest date that I have seen it in the fall is October 16, 1940.

Nesting usually takes place during the month of May, but it often extends well into June. Sutton found a nest about two miles north of Hartstown on May 12, 1922 which contained four eggs. He mentioned the finding of another on June 1, 1924 which contained fresh eggs. He gave a Hartstown record of Mr. Milo H. Miller for a nest which contained young birds as late as August 25, 1925. While the majority of the nests of this species are located in small trees or bushes in the proximity of water areas, it does, as Sutton pointed out, on occasions nest far from the water. On June 17, 1947, Mr. H. H. Harrison found a nest in a crabapple thicket at Conneaut Lake. It held two addled eggs and three young birds.

BLACK-CROWNED NIGHT HERON

***Nycticorax nycticorax*
hoactli (Boddaert)**

Sutton (1928) considered the Black-crowned Night Heron to be "a rare summer resident, or merely a summer wanderer" in the Pymatuning region. He cited but four records for the species from Conneaut Lake: an adult male taken by Mr. Welshons on June 15, 1910; an immature female taken by the same individual on August 20, 1910; an adult seen by Mr. Langdon on July 3, 1926; and an adult which was taken along the east shore on October 30, 1916. Trimble (1940) stated that the species was seen at the Pymatuning Lake, near Linesville, on April 2, 1934; and the following May 28 by Mr. Fricke. Mr. Fricke was the first to discover a nesting colony of the bird in the Pymatuning region when on May 14, 1936 he came across a rookery, in which he estimated there were thirty pairs of birds, about a half mile to the west of Linesville. In 1937 the birds did not breed in this locality but established a new rookery within the Pymatuning Refuge. During 1938, Mr. Oudette estimated that there were approximately ninety nests in the refuge colony that season. Trimble (1940) stated that the birds were already nesting there at the time she visited the site on April 24, 1938.

The Black-crowned Night Heron was regularly present during the summer months of both 1940 and 1941. It was usual, at all hours of the day, to see single birds and small groups in the shallow bay areas,



Photo Leo A. Luttringer, Jr.

Black-crowned Night Heron—a rare summer wanderer.

particular about the Upper Lake. Within recent years I have no knowledge of the location of breeding colonies, but the number of immature individuals which are often present during the summer months leads me to suspect that the species is breeding somewhere in the vicinity. During the month of May, 1940, I repeatedly saw large numbers of these birds in the Pymatuning Refuge area. On the evening of May 21, Fricke, Sickles, and I observed at least one hundred birds about a small wooded island in the refuge east of Ford Island. Later in the season, I examined this island; and, although no birds were present at the time, I noticed numerous nests in the trees. On both September 9 and September 23, during the same year, I observed between one hundred and one hundred and fifty birds, about half of them in immature plumage, on this same island which they were then undoubtedly using as a roosting area. On February 20, 1947, Sickles and I came across some old nests, which were undoubtedly of this species, in the swamp area between the Blair Bridge road and Hartstown, not far from the abandoned Great Blue Heron rookery.

The first arrivals usually reach this region early in April; the earliest date on which has been thus far recorded being Mr. Dilley's record of April 2, 1934. In 1940, Oudette reported seeing the first bird on

April 8. I saw my first individual the following year on the same date. Most of the birds leave the region by the middle of October. The latest record which I have for the species in the fall is November 5, 1941, on which date I observed several immature birds in a small bay area near the Linesville spillway.

AMERICAN BITTERN

Bottaurus lentiginosus (Montagu)

The status of this species is about the same as it was during the period covered by Sutton's report for he listed it as "a common migrant throughout the region, and a locally abundant summer resident in the marshy areas of Pymatuning Swamp". There are few marsh areas, indeed, from which the call of the "thunderpumper" does not emanate during the early spring. The bird normally arrives between the first and the middle of April, the earliest date on record apparently being that of March 29, 1926 at Conneaut Lake (Sutton, *vide* Langdon). On April 4, 1946, I flushed an individual in a marshy area along the north side of the Pymatuning Refuge not far from Linesville. Ordinarily it does not become common until about the middle of the month. In the fall, a few birds linger until the marshes begin to freeze, but the majority of the birds apparently migrate before the middle of October. On November 22, 1939, I flushed an individual in the refuge area near the mouth of Linesville Creek. I found single birds present in the same general area on November 4, 1940 and on November 11, 1941.

On May 7, 1941, Fricke and I found a nest containing three eggs in a marshy area, a short distance south of the Blair Bridge road. The following day when I returned to the nest, it contained four eggs. The bird would not flush when Mr. Hal H. Harrison and I visited the nesting site on May 19, in fact it permitted us to take a number of photographs at a distance of only two feet. On June 8, 1946, Mrs. Grimm, Mr. John F. Lewis, and I accidentally discovered an incubating female at Smith Marsh. She uttered an explosive hissing sound when my wife almost stepped upon her. Her eggs were quite evidently in a well advanced stage of incubation for she steadfastly refused to move; striking out with her beak and hissing vehemently. On July 3, 1947, Mr. H. H. Harrison observed a bird incubating three eggs in Conneaut Marsh. Flood conditions in May had probably destroyed a previous nest. On May 27, 1944, Mr. Harrison found a nest with five eggs in the vicinity of Blair Bridge, and another with three eggs at Hartstown.

On August 31, 1949, one flew into wires near the Fish Hatchery and broke its neck. Mr. James Ross made an analysis of the stomach contents: 95% consisted of crayfish and 5% was insects.

EASTERN LEAST BITTERN *Ixobrychus exilis exilis* (Gmelin)

Sutton (1928) stated that the Least Bittern was "a fairly common migrant and irregular and local summer resident in the marshy sections of Pymatuning and at the head of Conneaut Lake". It is such a shy and retiring bird that its presence in a region may often be overlooked. I have seen the species on a number of occasions during the summer months, but have never located a nest. Apparently it was much more common in the newly flooded area than it has been within recent years. It evidently does not arrive in the region before the month of May.



American Bittern on nest near Blair Bridge.

Photo by the author.

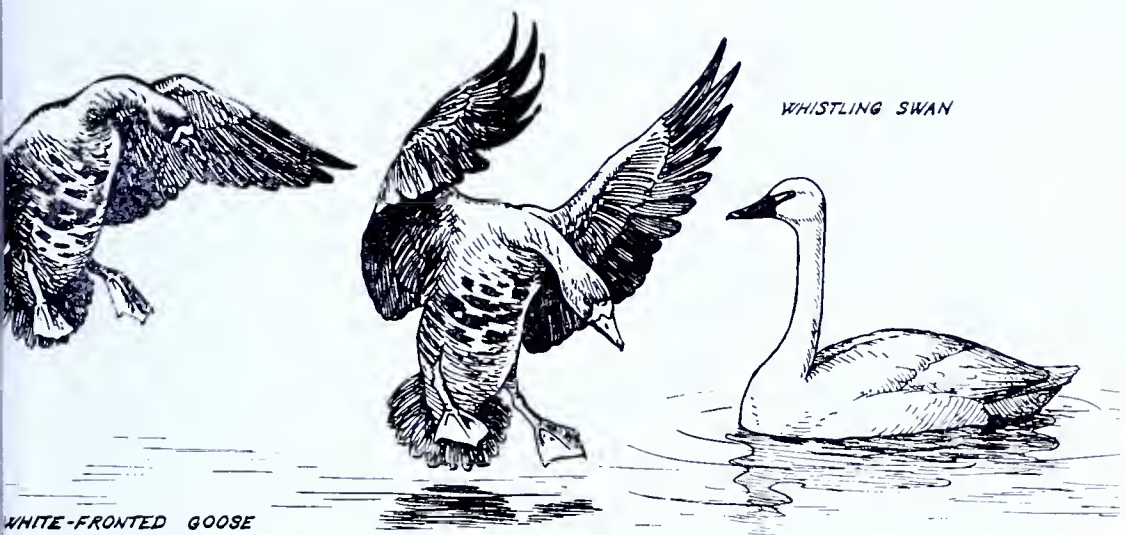
Sutton (*vide* Kirkpatrick) mentioned a record from Conneaut Marsh for May 3, 1897. Fricke saw one in the Pymatuning Refuge near the mouth of Linesville Creek on May 12, 1940. Summer records for the species are fairly numerous. On August 27, 1940, I saw three birds in the marshy section near Blair Bridge, and on June 17, 1941, observed several birds in the marsh at Hartstown. The latest record for the species in fall is that of September 24, 1943 (Shoemaker) which is but a day earlier than the old record of September 25, 1895 of a bird seen in a small swamp two miles south of Meadville (Sutton, *vide* Kirkpatrick).

Although Sutton cited several records for the Least Bittern during the months of May and June, he found no nests of the bird in the region. Hicks (1933) gave an account of his finding of two nests in the old swamp area within Ashtabula County, Ohio, on July 11, 1928. Mr. Fricke was actually the first to find the nest of this species in the Pennsylvania portion of the region. On June 19, 1936 he discovered three nests; and two days later he found five more, all of which contained eggs or young birds. He collected a set of five eggs on June 19 which were about half incubated. According to Mr. Fricke most of the nests which he found were in stands of cattails and among the emergent leaves of the spatterdock. Mr. H. H. Harrison found a nest at Hartstown on May 20, 1944, and on July 1 he found young birds in this nest. On June 15, 1947 he located five nests in marshes about Conneaut Lake; two had five eggs: one had three; and two had only two eggs. On June 5, 1944, Mr. Swoger saw a nest under construction at the Hartstown Marsh. When he revisited it on June 15, it contained four eggs. The bird, on the latter date, permitted him to approach within three feet; but the following day it was extremely shy when he and Dr. Twomey visited the nest.

MUTE SWAN

Cygnus olor (Gmelin)

For the greater part of two years, a swan of this species stayed at the Pymatuning refuge. Mr. Raymond M. Sickles and I first saw this individual in the old corduroy road section of the refuge on July 17, 1940. During the winter months the bird associated with the ducks and Canada Geese at the spillway and was then seen almost daily. It was killed by a train during the winter of 1942-1943.



WHISTLING SWAN

Cygnus columbianus (Ord)

Sutton (1928) said that the Whistling Swan was "a rather rare and irregular migrant, which sometimes occurs in immense flocks and then again may be absent for years at a stretch". Its present status in the region is certainly that of a regular migrant; and, although it varies in numbers from season to season and from year to year, it is usually common and frequently abundant. At least some swans are seen every spring; but, if the weather is mild, many of the flocks pass through without stopping. Within recent years, the species seems to be more abundant in the fall. The birds tend to linger longer in this region than they do on their spring migration.

The Whistling Swan migrates north early in the season, the vanguard often arriving in this region before the ice has entirely left the lakes. Oudette recorded it as early as March 10, 1946. The mass migration generally takes place during the last two weeks in March and the first week in April. On March 22, 1944, I observed a flock of about a hundred birds passing high over the refuge area. On March 20, 1946, I saw a flock of about forty birds and several smaller flocks in the same area. On April 3, 1940, Mr. Sickles saw at least 1,500 birds about Pymatuning Lake. Stragglers are occasionally seen late in April. Mr. Dilley reported having seen an individual on April 27, 1933; and one, which was very probably injured, lingered for several weeks during May, 1933 (Trimble, 1940). In the spring of 1940, four pinioned birds were released in the refuge area; and some of the unusually late records made subsequently may not be so reliable. All of the pinioned birds have since died.

The fall migration occurs during the latter part of October and extends into the early part of November. On October 29, 1941, I observed eight birds in flight over the refuge area; and on November 11 of the same year, Mr. J. G. Crumb observed a flock of 47 near Pennline. Swans were unusually abundant during November, 1942. Mr. Raymond M. Sickles wrote to me under date of November 9, 1942, as follows: "The swans have been migrating in big numbers. I counted ten flocks one day and have seen three and four flocks on other days. I saw two such flocks today." On November 4, 1945, migrating flocks were seen all day. I estimated that there were at least two hundred birds on the Pymatuning Refuge that afternoon. On November 11, during the same year, large numbers of the birds were present both within the refuge and near the Esypville-Andover causeway. Mr. Sickles told me that the marsh area on the east side of the refuge was literally white with swans that evening. This particular fall, about seventy-five birds remained about the refuge area until the evening of December 13, and apparently migrated that night. The following day, the weather turned much colder, and during the night the lake froze over. Almost every fall the hunters report seeing "big flocks of white geese" but in practically every instance the birds are actually swans.

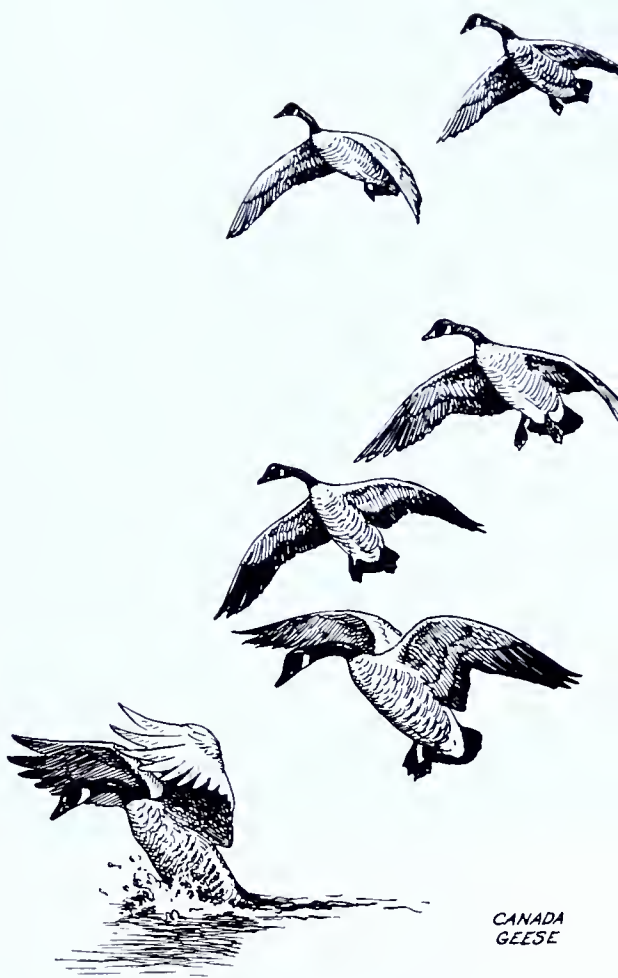
Nest of Canada Goose in Pymatuning Refuge.

Photo by the author.



COMMON CANADA GOOSE
Branta canadensis canadensis
(Linnaeus)

Sutton (1928) summed up the status of the Canada Goose as "a common and regular migrant, sometimes abundant" in the Pymatuning region. He added that "while these great birds customarily stop at Conneaut Lake, they are also often seen at Crystal and Lower Lakes (Hartstown) where they have been known to remain for several days at a time, especially during disagreeable weather". Since the creation of Pymatuning Lake, it has become a favorite stopping place for these birds during their spring and fall migrations. Its status still remains as that of a common, and often abundant, transient, but more birds are seen now at the Pymatuning than elsewhere in the region.



CANADA
GEESE

The Canada Goose migrates northward so early that the lakes of this region are frequently still covered with ice. On February 24, 1925, Mr. Langdon observed a flock of fifty birds standing on the ice at Conneaut Lake (Sutton, 1928). The height of the spring flight takes place during the month of March, during which it is not unusual to find a thousand or more birds on the Pymatuning Lake. Sometimes migrating flocks are seen well into the month of April; and as late as April 24, 1941, I observed a flock of between one hundred and fifty and two hundred geese which I am reasonably certain were migrants.

In the fall, the first migrating flocks usually reach this region during the latter part of October. Migrating geese were seen at Shermansville on October 21, 1925 (Sutton, *vide* Bergstrom). On the same day in 1940, I noted a flock of about one hundred birds which flew high over Linesville, apparently not stopping in the area. Large numbers of migrating geese are often observed during the month of November, one flock often following another at various intervals for days at a time. On the afternoon of November 18, 1940, several such flocks, totalling at least 1,500 birds, settled on the Pymatuning Lake near Espyville (Earl Campbell). An item in the "Conneaut Lake Breeze" stated that "several thousand" geese alighted on Conneaut Lake on November 21, 1931 and passed the night there. Mr. Sickles reported "at least a thousand geese" feeding in a field on one occasion during

the late fall of 1947. On December 25, 1925, Mr. C. A. Bergstrom observed flocks of Canada Geese at Conneaut Lake (Sutton, 1928).

Actual dates of arrivals and departures of this species in the region are now difficult to obtain because a local breeding colony of these birds has been established in this area. The establishment dates back to the fall of 1936 when thirty pinioned Canada Geese were released at the Pymatuning Refuge. According to Mr. Fricke, some of these birds nested there during the spring of 1937. A second group of thirty pinioned birds was obtained in the fall of 1938 and subsequently released in the area. Since that time, the species has nested each consecutive year, the offspring of the original pinioned birds now nesting regularly in the region. Unfortunately no attempt was made to band the young birds which were reared in the area, but it is safe to assume that at least a portion of them regularly migrate from the area each fall. During the winter months the birds are fed at the refuge, and their numbers usually range from a few hundred to about a thousand individuals. I doubt very much if the number of birds which have wintered in the area has ever represented the actual total of the local population as it has never quite approximated the potential increase minus a reasonable allowable loss.

For several years the local Canada Goose population has consisted only of birds possessing their full powers of flight, the original pinioned birds having disappeared. Undoubtedly most of them were killed by hunters. Each winter, however, some of their offspring have remained in the area; but in the fall of 1945, when the waterfowl hunting season practically extended through the entire month of December, the harassed Pymatuning geese suddenly disappeared about mid December; and not a single bird was seen or heard of during the following winter.

On February 28, 1946, a flock of twenty-one birds returned to the refuge area; by March 4 the number had increased to approximately one hundred. There was no question but that the entire local goose population migrated that particular season. These early-arriving individuals had paired off and were seeking nesting sites by the time the flight of migrants arrived during the early part of March. No longer do the geese confine their nesting to the refuge and its immediate vicinity, for during the past few breeding seasons nests, or geese with families of recently hatched young, have been located at points up to ten or more miles distant from the area. They are known to have nested at the Hartstown Marsh, Smith Marsh, Conneaut Lake Marsh, and at various places on the main body of the Pymatuning, including some islands not far from the main dam at Jamestown. Mr. Sickles told me that he personally knew of the locations of eleven nests in the Pymatuning region during the breeding season of 1947, and that he was feeding approximately 750 geese at the refuge during the winter of 1947-1948.



Photo by Karl Maslowski.

Canada Goose at nest.

The resident colony of Canada Geese pair off with the approach of spring. Sometimes the females begin to lay by the second week in April, although many clutches are not completed until sometime in the early part of May. A nest containing five eggs was found on April 19, 1941 (C. W. Bauder). Mr. Fricke and I found a nest as late as May 26, 1941, which contained four eggs. On May 10, 1947, I photographed a nest which was constructed on a small hummock surrounded by water. It contained five eggs. On May 21, 1940, we observed the hatching of a brood of seven goslings in a nest located on a small isle off the shore of Ford Island. Mr. Max Henrici observed a pair with five small goslings on May 9, 1948. When the young birds are about fledged, the family groups apparently join each other; then the bands are often seen in the more remote marshy portions of the refuge. Often, in the region of the old corduroy road, I have seen the exposed mud flats literally covered with droppings and feathers, indicating that the birds resort to the privacy of interior marshes during their post-nuptial moulting period.

The fall of 1949 witnessed the greatest kill of Canada Geese ever made at the Pymatuning, according to Mr. Raymond M. Sickles. He estimated that approximately 550 birds were taken in the general

vicinity of the refuge. Game Protector Sickles writes that "goose hunting at the Pymatuning has become very popular and as a result the hunting pressure is terrific". In early December, after the close of the open season, he estimated that there were approximately 1,000 geese in the refuge area. One wonders if the Pymatuning might not become another Horseshoe Lake.*

AMERICAN BRANT

***Branta bernicla hrota* (Müller)**

Records for this maritime species are very meager in the Pymatuning region, so it must be considered a very rare and irregular visitant in the section. No specimens from the region are available. Sutton (1928) stated that Mr. E. G. Peterson, of Conneaut Lake, shot two specimens at that locality during the late fall "of a former year"; that Mr. Langdon had found Brant to be fairly common on the deeper waters of the lake during the fall and early winter of 1910-11; and that during the late fall of 1907 Mr. Welshons saw a small flock there. The only record for Pymatuning Lake is that of Oudette (1936). On March 15, 1936 he saw four birds; and the following day thirty-one. They remained in the vicinity until March 30.

WHITE-FRONTED GOOSE

***Anser albifrons albifrons* (Scopoli)**

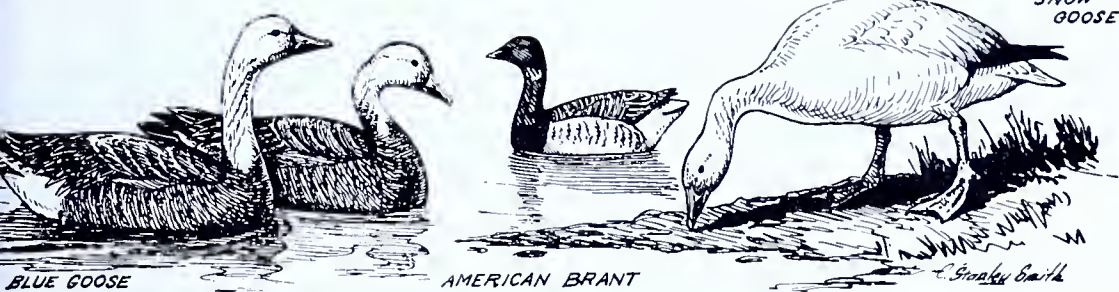
The only records of this species from the region are those given by Sutton (1928). "Mr. Welshons saw a small flock on the ice at Conneaut Lake on March 8, 1908, but unfortunately did not procure a specimen. Mr. Langdon saw a flock of thirteen birds on April 3, 1926. These were examined to good advantage and their yellow feet were noted. One or two hunters have secured specimens during former years, but these were not preserved." It is a very rare and irregular migrant in this region.

LESSER SNOW GOOSE

***Chen hyperborea hyperborea* (Pallas)**

Sutton (1928) stated that on March 15, 1915 and on March 24, 1924 immense flocks of Snow Geese were seen flying over Meadville (*vide* Kirkpatrick). Mr. Kirkpatrick also noted Snow Geese in the fall at the same place, a flock of about fifty individuals having passed over on October 29, 1922. Other records cited by Sutton include a flock of eight seen at Conneaut Lake by Mr. George Wilson on November 12, 1920 and one shot at the lake about 1915 by Mr. Walter Long of Conneaut Lake. "B. L. Oudette reports having seen a single snow goose in early March, 1938, at Pymatuning Lake and three on October 20, 1939" (Todd, 1940). There are a few subsequent records from the Pymatuning. On October 24, 1941, Mr. Oudette reported that he

* See "Implications of a goose concentration" by William H. Elder (Trans. 11th North American Wildlife Conference, pp. 441-445).



had seen three birds with a small group of Blue Geese in a bay area on the refuge south of the spillway. The following day I observed a flock of Blue Geese in flight near the spillway, and there were three Snow Geese in the flock. I do not believe they were the same birds seen the day before by Mr. Oudette since this flock came in high from the north at about seven A.M.

Sutton (1928) listed the occurrences of these geese under the heading of Greater Snow Goose (now *Chen hyperborea atlantica* Kennard), but Todd (1940) included all of the Western Pennsylvania records as the Lesser Snow Goose. No specimens have thus far been taken in the Pymatuning region, but on November 6, 1946 a bird in immature plumage was picked up at the Hillsville School in the suburbs of New Castle, Lawrence County, after it had struck the building. This specimen is now in the Pymatuning Museum and is almost certainly referable to the race *hyperborea*, the Lesser Snow Goose. The species is a rare and irregular transient in this region.

BLUE GOOSE

Chen caerulescens (Linnaeus)

Sutton (1928) included the Blue Goose in his hypothetical list of the birds of this region, adding that "we may reasonably expect it to be found about Conneaut Lake both in spring and fall". Oudette (1937) reports that he observed from seven to twenty of these geese on the Pymatuning Lake between October 14 and October 23, 1936. The same observer reported seeing several birds in the Pymatuning Refuge on November 7, 1937; seven during early March in 1938; a flock of sixty on October 20, 1939 near the Polleck Bridge site north of Espyville; eleven in a bay on the refuge lake south of the Linesville spillway on October 24, 1941; and seven in the old corduroy road section of the refuge on November 4, 1941. About seven A.M. on the morning of October 25, 1941, I observed a flock of twenty-five Blue Geese and three Snow Geese flying high over the Pymatuning Lake near the Linesville spillway. The light was good, and with my 8 x 40 Bausch & Lomb binoculars I could clearly discern their white heads and dark grayish bodies. An immature specimen was collected on a wheat field near the refuge on November 24, 1945 and is now in the Pymatuning Museum collection. It is a rare and irregular transient in this region.

COMMON MALLARD

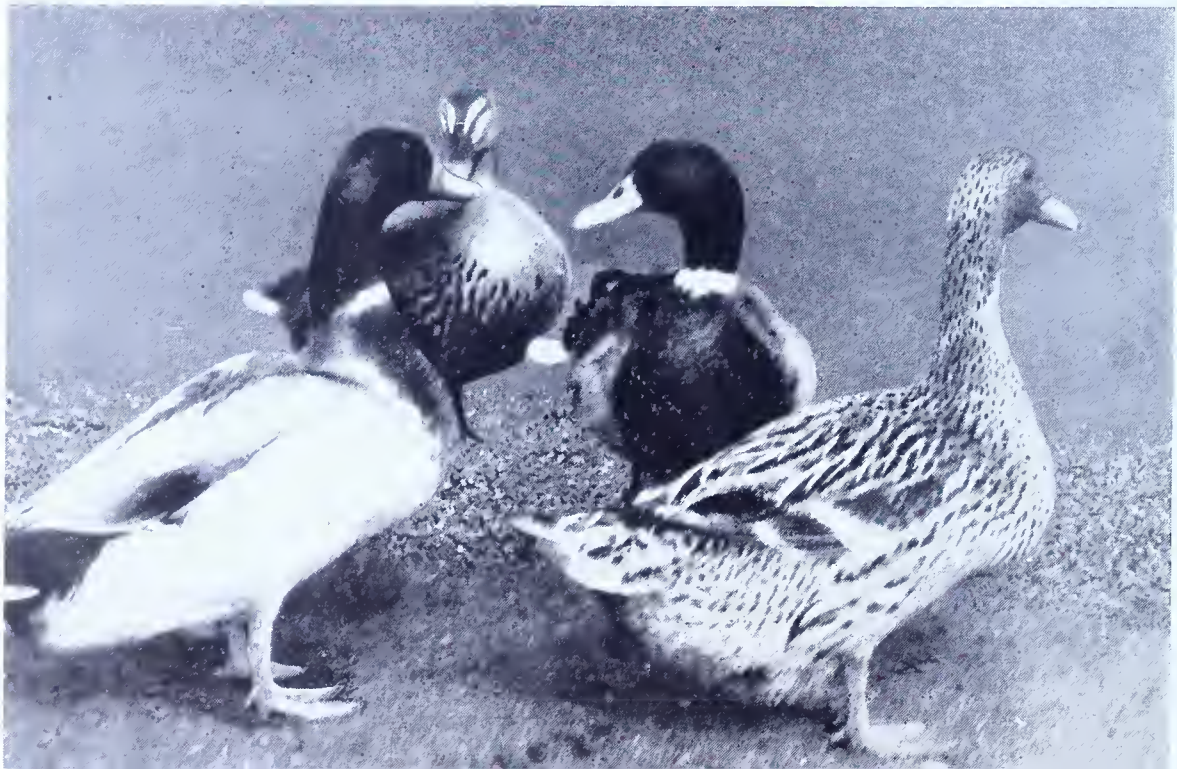
Anas platyrhynchos platyrhynchos
Linnaeus

Sutton (1928) gave the status of the Mallard in the Pymatuning region as that of "an abundant migrant; equally common in spring and fall, an occasional winter resident, and rather common summer resident, which has been known to nest in the Pymatuning, at Conneaut Marsh, and at local ponds north of Geneva Township". Since that time it is believed that the species has even increased, particularly during the breeding season. Between 1934 and 1940 it nested in large numbers about the newly created Pymatuning Lake, and it is still a rather common breeding species in the region. A number of domesticated birds were released at the Pymatuning Refuge between 1935 and 1938; and, while they and their offspring have become a source of considerable interest to the visiting public, it has made the status of the wild Mallard population somewhat confusing.

The spring migration takes place during the month of March and possibly the early part of April. Sutton mentioned a flock having been seen in the Pymatuning Swamp on March 11, 1925, by Messrs. Langdon and Bergstrom and other records from Conneaut Lake on March 15, 1925 and March 28, 1913 (*fide* Welshons). Although a number of Mallards have wintered at the Pymatuning Refuge each year, there is always a definite increase noted in the population during the latter part of March and the month of April. The first evidence of an influx of migrant birds is usually noticed about the tenth of March in this locality. Soon thereafter, numerous flocks of this species are seen regularly in

Mallards are equally common in spring and fall.

Photo by U. S. Fish and Wildlife Service.



the various marsh areas throughout the region. The fall migration takes place during the latter part of October and practically throughout the month of November.

The Mallard is by far the commonest breeding species of duck in the Pymatuning region. Nests are sometimes found before the middle of April, but the majority of the local records are between April 20 and May 10. A nest with thirteen eggs which was reported on April 10, 1938 (H. J. Bergner) is a rather unusually early record for so large a clutch. On May 9, 1940, Mr. Fricke and I found a nest which contained seven eggs on a muskrat house in the refuge area. I found one on May 10, 1947 that contained eleven eggs. Broods of downy young ducklings are frequently seen during the month of May. On July 30, 1940, I saw a female with downy young which were certainly less than ten days old. Such late broods of young are seen occasionally. They undoubtedly represent successful renestings after previous failures to bring off a brood. The usual nesting site is on the ground in grassy or weedy cover, but occasionally nests are found on the top of old stumps. One which we examined during the early part of May, 1947, was placed in a large brush pile in a cut-over hemlock woods.

BLACK DUCK

Anas rubripes Brewster

Sutton (1928) stated that the Black Duck nested rarely in the Pymatuning region but was a very common migrant. The two forms of this species which he included in his report are now generally conceded to be merely age differences: old adult birds which possess bright coral-red legs and bright yellow bills were formerly supposed to be a northern race, the Red-legged Black Duck (*rubripes*) while the younger birds with duller legs and bills were considered as the Common Black Duck (*tristis*).

The Black Duck is a common, often abundant, migrant and is second only to the Mallard in frequency of breeding. Often, during both the spring and fall migrations, they outnumber any of the other species of ducks. In the spring it migrates very early, usually arriving in some numbers early in March, frequently remaining very numerous until the latter part of April when most of the migrants pass on to the north. On March 11, 1941, I observed a large number of them near the Linesville spillway. In the fall there is a noticeable increase in the population during October when the height of the fall migration apparently gets into full swing.

Nests of the Black Duck are often found during the latter part of April. On April 29, 1940, I found a nest containing nine eggs. Trimble (1940) quoted Mr. Oudette as saying the Black Ducks were already nesting at the time of her visit on April 24, 1938; but she did not mention that she found any nests. On May 3, 1940, I found a nest in the



Photo by the author.

A Black Duck nest is placed in the hollow top of this stump.

hollowed out top of a stump in a deep hemlock woods. On that date it contained eight eggs; but two days later I found it destroyed by some predator, very likely by crows which were quite common about the woods. Mr. C. B. Shoemaker found a nest which still contained eggs on June 1, 1943. It undoubtedly was a renesting attempt by a female which had lost her first clutch of eggs. Broods of young ducklings are often seen during May. Todd (1940) quoted a record of a brood being seen as early as May 12 (1931). On June 30, 1941, in the Hartstown marsh area, I observed a female with seven young which appeared to be about half grown.

GADWALL

***Anas strepera* Linnaeus**

Sutton (1928) regarded the Gadwall as "one of the rarest members of its family at both Pymatuning and Conneaut Lake". Records which he presented for Conneaut Lake are as follows: four seen by Bergstrom, Langdon, and himself, May 14-15, 1925; a small flock seen by Langdon, May 8-13, 1926; an adult female taken by Welshons, October 1, 1926; two males taken by William Jackson, October 18, 1926; and a male taken by Welshons, November 3, 1926. Evidently the species was then known only as a migrant in the region.

The Gadwall has been regularly present, at least since 1934, as a summer resident in the Pymatuning Lake region. It also seems to be some-

what more common as a migrant both in the spring and in the fall. One of the ornithological surprises which were provided with the creation of the Pymatuning Lake was its discovery as a breeding species. Mr. Fricke was the first to discover a nest of the bird in this region when on May 18, 1934 he flushed a female just west of Linesville. The nest contained ten eggs which were almost ready to hatch. On May 22, he collected two unhatched eggs which were still in the nest. They are now in the collection at the Carnegie Museum. On June 23, 1939, Mr. Oudette found a nest which contained eleven eggs. Female birds with broods of young have been seen on a number of occasions. Mr. Fricke saw a female with three young on May 27, 1935. Boggs (1939) reported having seen a female with four young on May 22, 1938. Mr. Oudette found two broods of nine and seven young during the summer of 1938 (Trimble, 1940). On July 7, 1941, I observed a female in the refuge area which had seven downy young.

The Gadwall arrives in this region during March. On March 4, 1946, I saw a male and a female near the Linesville spillway. On March 12, 1941, I saw a male bird in the same locality. Individuals are seen rather frequently throughout the summer months. On November 24, 1941, I counted six males and four females in a bay area on the south side of the refuge and three males in another bay on the north side. On December 11, 1941, about twenty birds were observed feeding in a shallow bay south of the Linesville spillway.

AMERICAN PINTAIL

***Anas acuta tzitzihua* Vieillot**

Sutton (1928) considered the Pintail to be "common as a spring and fall migrant, rather uncommon and irregular as a winter resident". That status has not changed materially within the past two decades except for the fact that it has been discovered breeding within the region. While I have no recent winter records from the region, it is still possible that occasional birds may overwinter as they have been known to do in past years according to Sutton. Mr. Fricke discovered the first nests of this species in May, 1934; and it appears to have nested uncommonly during the succeeding years.

The first migrants usually arrive in this region during the early part of March, the average date being about March 12. The earliest spring record at the Pymatuning Refuge was that of February 28, 1936. The species becomes quite common during the latter part of March; many are usually seen throughout the early part of April, a few birds sometimes even lingering into the month of May. On March 20, 1925, tremendous flocks were seen everywhere about Pymatuning and Conneaut Lake (Sutton, *vide* Langdon). Often during the latter part of March, and even in early April, thousands of Pintails will throng the Conneaut Marsh and other regional marsh areas. I found them to be

very numerous throughout the region on March 21, 1944 and saw a flock of between sixty and seventy-five birds pass over Ford Island. On April 1, 1941, I found them to be very common in the refuge area, at Espyville, and in the Hartstown marsh areas. On April 10, 1944, Earl Davis saw fifty birds in a bay just north of Ford Island and another twenty-five birds at the Andover end of the causeway.

The fall migration often begins during the early part of September. A single bird was observed and taken by Mr. Welshons at Conneaut Lake, September 3, 1912 (Sutton). I saw eight birds in the old corduroy road section of the refuge on August 20, 1941, which I am led to believe were migrants for I had not seen even a single individual in the region since the middle of May that particular year. On September 3, 1940 and on September 16, 1941, I observed them to be present in numbers too large to even doubt that they were migrants. The latest date that I have personally observed the species in this region was on November 21, 1940.

EUROPEAN TEAL

Anas crecca Linnaeus

There is but one record for this rare straggler in the Pymatuning region. On May 11, 1946, Messrs. Grant M. Cook and Vincent McLaughlin discovered a male on a small puddle about a mile and a half

Pintails are common as spring and fall migrants.



west of Linesville. The following day it was seen by a number of other ornithologists who had convened that week-end at the Pymatuning. I watched the bird for at least an hour as it swam in and out of a stand of cattail and swamp dogwoods. The horizontal white stripe on the bird's scapulars was plainly evident even with the naked eye. To make comparisons between it and the Green-winged Teal possible, a couple of males of the latter species obliged with their presence; and often both could be studied in the field of my 8x40 Baush & Lomb binoculars at the same time.

GREEN-WINGED TEAL

***Anas carolinensis* Gmelin**

Sutton (1928) rated the Green-winged Teal as "a fairly regular migrant, regarded as common by the local hunters". Our experiences with the species in the region indicate that while it is a regular migrant, it is only occasionally common. At times, both in the spring and in the fall, the bird is tolerably common; but there are many seasons when but very few are seen.

The migration in spring extends from the latter part of March to about the middle of May. On March 14, 1941, I saw a male at the Linesville spillway. There are numerous records for the month of April and many for the early part of May. On May 10, 1946 it was seen in fairly large numbers and in many localities. It has been recorded at Harts-town on May 17, 1925 (Sutton, *vide* Hunter). Occasionally individuals are seen at the Pymatuning during the summer months.

The fall migration usually begins in early September and lasts until about mid-November. On August 19, 1941, I observed three birds in the corduroy road section of the refuge which could possibly have been migrants but may have been summering "loafers". On September 12, 1940, I observed about twenty-five birds in the same area and on September 16, 1941, I saw a similar number in a bay area near Linesville. The latest record available is that of November 21, 1940, on which date a few birds were still present in the refuge area.

Mr. Fricke found a nest of the Green-winged Teal with three eggs on May 25, 1936, that was subsequently abandoned by the bird. Trimble (1940) stated that L. E. Hicks had told her he had seen broods of ducklings in the Pymatuning Refuge and further that he has "numerous records of nests and young observed and collected along the Ohio shore". On June 26, 1940, I saw a pair of birds in the refuge area near Linesville; and I saw a male bird at the same spot on July 12, but did not observe any signs of a brood of young. As far as I am aware, there are no recent breeding records for the Pymatuning region.



Nest of Blue-winged Teal.

Photo by the author.

BLUE-WINGED TEAL

Anas discors Linnaeus

The Blue-winged Teal, according to Sutton (1928), was a common migrant both in spring and fall. He had several summer records and presumed the bird was breeding in the region, but he was unable to obtain any positive nesting records.

This little duck usually puts in its appearance during the latter half of March and usually becomes quite common by mid-April. It is often so common during the first two weeks of May that I am sure a great many of the birds present are still transients. The earliest record that I am aware of is an individual seen by Mr. Oudette on March 4, 1936. Shoemaker found it on March 26, 1943. On April 1, 1941, I observed a male bird at the Hartstown marsh, the first that I had seen that particular season. In 1946 I did not see the species until April 6. It migrates south quite early in the fall, the greater majority of the birds having left the region by the end of September. The peak of the fall migration usually comes between September 1 and September 20. On August 29, 1941, and again on September 10, 1940, this teal was quite abundant in the Pymatuning Refuge. I observed six birds there on October 10, 1940; but in 1941 I saw an occasional bird until the very last week in October. Bergstrom found one still present at Conneaut Lake on November 14, 1925 (Sutton).

Mr. Fricke first found the nest of a Blue-winged Teal on May 16, 1935. Since that time a number of nesting records have been obtained, not only at the Pymatuning but in several of the other regional marsh areas. Trimble (1940) reported finding a nest west of Linesville on May

21, 1937, which contained twelve eggs. One which I saw at Hartstown on May 24, 1941, held a like number of eggs. A nest on Ford Island contained seven eggs on May 12, 1946. The bird invariably selects a cover of grass, weeds, or sedges as a nesting site. Females with broods of downy young are often seen during the month of June. During 1941, I observed a female with a brood of seven near the refuge boundary on Linesville Creek on June 10; another with a brood of ten in a bay south of the Linesville spillway on June 17; and another with a brood of nine at Smith Marsh on June 26. I observed a female with a brood of downy ducklings at Smith Marsh on July 10, 1946. Mr. H. H. Harrison observed one with a brood of young near the Pymatuning Fish Hatchery on June 11, 1944. Mr. Arthur Swoger found a nest with eleven eggs at Smith Marsh on June 8, 1944.

EUROPEAN WIDGEON

***Mareca penelope* (Linnaeus)**

Sutton (1928) stated that while there were several reports of European Widgeons having been taken at Conneaut Lake, he was unable to locate any specimens taken in the region. Since that time there have been a surprisingly large number of sight records from the region, but the only specimen that I know of is a male bird taken at the Pymatuning by Mr. Oudette during April, 1942. It is now in the Pymatuning Museum collection.

Trimble (1940) listed the following sight records from Pymatuning: one, April 26, 1936 (Seiple); one, October 23, 1936 (Trimble, et al.); one, March 27, 1937 (Skaggs); one, April 3, 1937 (Skaggs); four, April 6, 1937 (Trimble); seven, October 2, 1938 (Oudette). From Hartstown: one, April 10, 1927 (Dilley); five, April 11, 1937 (Cook). Subsequent records for the region are as follows: one, April 27, 1940, near Jamestown (Skaggs); one, at Ohio end of Espyville-Andover causeway, April 3, 1941 (Grimm); one, at Hartstown marsh, April 9, 1941 (Grimm), one, in Pymatuning Refuge, May 1, 1941 (Grimm); and one, in Pymatuning Refuge, October 15 to October 31, 1941 (Grimm). Inasmuch as the females of this species are not distinguishable in the field from the female Baldpate, all of the above mentioned sight records pertain to male birds. I am sure that a goodly number of female specimens pass through the region without being detected on this account. The European Widgeon associates with the flocks of Baldpates and the males are easily distinguished, even at some distance, by their differently contrasting color.

BALDPATE

***Mareca americana* (Gmelin)**

Sutton (1928) gave the status of the Baldpate, or American Widgeon, as that of "a rather uncommon migrant" in the Pymatuning region. He cited several spring records from Conneaut Lake, one from Lower

Lake, Hartstown, and another of a large flock seen in Conneaut Marsh on April 10, 1884 (*vide* Kirkpatrick), but he had few fall records for the species. Since the construction of the Pymatuning Reservoir it has certainly become one of the most common of ducks during both spring and fall migrations.

The spring migration of the Baldpate commences during the latter part of March, with big flights during the month of April. The earliest date on which it has been recorded in the spring season is February 27, 1939 (Todd, *vide* Oudette); the average date of its arrival between 1940 and 1947 has been about March 15. On March 4, 1936, I observed several birds at both the Linesville spillway and at the Espy-vill-Andover causeway. On April 1, 1941, I found the bird to be very common about Pymatuning Lake and at Hartstown. Trimble (1940) stated that her party saw a thousand or more birds at Hartstown on April 11, 1937. On April 12, 1947, there were hundreds of them present in a wooded swamp area between the Blair Bridge road and Hartstown which had been flooded by a beaver dam. On May 10, 1940, I saw two males and one female bird in the Hartstown marsh.

The fall migration gets under way early in September. During both 1940 and 1941 I saw a flock of about two dozen birds in the refuge area. Its abundance certainly increases rapidly during the month of September. I estimated that about two hundred were present on September 10, 1941 and by September 16 my estimate had increased to about one thousand. Large flocks are commonly seen every year at about this time. On September 30, 1940, I estimated that there were between

The Baldpate is an abundant spring and fall migrant.

Photo by U. S. Fish and Wildlife Service.



1,000 and 1,500 present on the Pymatuning refuge. On October 30 of the same year their numbers had not appreciably diminished any. While the big flight is usually over before mid-November, the species often remains common throughout that month. I saw several birds still present in a stretch of open water below the Linesville spillway as late as December 14, 1941, after the lake had entirely frozen over.

Summering individuals of this species are occasionally seen, particularly in the refuge area. I am inclined to believe that the majority of these birds are young or unmated males which did not complete their migration. On July 8, 1940, I observed what appeared to be a mated pair in a bay along the south side of the refuge area; on July 12 I saw a male bird at the eastern end of Ford Island. Trimble (1940) stated that her party saw mated pairs on June 7, 1936. Later in the same year Mr. Oudette reported that he had seen adult birds with young. He also claimed to have seen broods of young during the summer of 1938. I found no evidence of the species breeding in the region during the summer of 1940 or during any of the years following. A nest of the present species has never been discovered anywhere in the region.

On the morning of October 30, 1940, Baldpates and Coots were exceedingly numerous in the bays along the south shore of the refuge lake. I made the interesting observation that the Baldpates were robbing the Coots of the water-weed (*Anacharis*) which the latter obtained by diving down to the beds of this submerged aquatic plant. Whenever a coot would bob up to the surface with bits of the plants in its bill, all the baldpates in the immediate vicinity would rush in to snatch it from the unfortunate bird and hastily gulp it down.

SHOVELLER

Spatula clypeata (Linnaeus)

Sutton (1928) regarded the Shoveller as a "rather rare transient visitant apparently present in about equal numbers in spring and fall". Although he stated that it "may have formerly nested in this district", he offered no records to substantiate this latter statement. The species is a regular, although by no means very common, migrant; and since 1935 it has been found nesting in very limited numbers.

The earliest date for its arrival in the spring is March 4, 1936 (Oudette), but ordinarily it does not arrive before the middle of March. The female which I observed on January 21, 1942, with the wintering ducks at the spillway may very possibly have been a cripple which had found its way there. April records for the species are very numerous, and in some seasons the species is tolerably common during the month

with occasional birds seen up until mid-May. On April 1, 1941, I counted nine males and five females in the marsh at Hartstown. On April 10, 1944, several were seen in a mixed flock of ducks at the Ohio end of the Espyville-Andover causeway (Davis). On April 9, 1947, I observed at least twenty-five birds in a mixed company of ducks at the Hartstown marsh. I occasionally saw a few birds in the Pymatuning Refuge until mid-May during 1940, and recorded it several times between June 9 and June 15, 1943.

The fall migration apparently takes place no earlier than the first week in October. On October 4, 1940, I observed a few birds at Hartstown; and on October 7, 1941, a few were seen in the refuge area (Fricke). A few birds remain well into the month of November. On November 16, 1941, I observed four birds, one of which was an adult male, in a bay near Linesville. A female was taken at Conneaut Lake on November 24, 1922 (Sutton).



Photo Penna. Game Comm.

Young Wood Ducks are alert, attractive creatures.

Mr. Fricke found the first nest of this species on May 27, 1935. It contained eight eggs of the Shoveller and eight of the Ring-necked Pheasant. On May 27, 1936, he located another nest which contained ten eggs. It was placed in a tussock of tall grass in a small marshy spot in an open field, some distance north of the refuge lake. Although Trimble (1940) stated that "the breeding population has apparently increased during the past two years", it certainly has not been common during more recent years; and it has rarely been recorded among the breeding species.



Photo by D. L. Batch

Unusual photo of a mother Wood Duck about to leave her nest.

WOOD DUCK

Aix sponsa (Linnaeus)

Sutton stated that the Wood Duck was "common, and sometimes during recent years abundant as a migrant, and locally a regular and common summer resident". Competent observers quite generally agree that they have since increased in numbers following the creation of the Pymatuning Lake.

The Wood Duck sometimes arrives in the region during the latter part of March, but it usually does not become common until mid-April or thereafter. The earliest date that I have recorded it was on March 23, 1940. These ducks are common on all of the local waters throughout the summer months. Their numbers are augmented by the arrival of migrants from regions to the north in the latter part of September and the early part of October. On November 12, 1941, I saw a flock of about fifty birds at the eastern end of Ford Island. Very few birds remain in the region later than the middle of November. On November 28, 1945, I examined a male which had been shot that day in the vicinity of Blair Bridge. Todd (1940) gave two December records for it in the Hartstown area: December 7 and December 28, 1931.

Sutton cited several records of the species nesting in the vicinity of Hartstown, Conneaut Lake, and elsewhere in the region prior to 1928. During May, 1935, Mr. Fricke discovered three nesting sites near Linesville, all of which were in cavities in beech trees. On May 24, 1940, he

found a bird nesting in Peck's Woods about a mile and a half west of Linesville. Mr. Arthur Swoger observed a pair nesting in a tree in front of a house along the Shermansville-Hartstown road, between the former town and the intersection of Route 285, on May 12, 1946. There were twelve eggs in the nest.

The numerous broods of young which are seen indicates that the species nests very commonly in the present region. Miss Trimble (1940) stated that her party found a female with a brood of twelve young at Hartstown on June 6, 1936. On June 6, 1940, I saw a female with a brood of six young in the refuge area. In the same location during 1941 I found a female with a brood of eleven downy young on June 5, and another with a brood of nine on June 24. On June 28, 1940, I observed a brood of eight young which were about half grown. Most of my July records are for broods from one-third to nearly two-thirds grown; but on July 25, 1940, I observed a female with a brood of seven which were scarcely more than a week old. By the early part of August most of the broods are reared, and the family groups often congregate in the spatter-dock beds.

REDHEAD

***Aythya americana* Eyton**

Sutton (1928) stated that the Redhead as a migrant was "apparently commoner in spring than in fall, and occasionally abundant". It was, at that time, recorded principally from Conneaut Lake. During recent years the species has been regularly present at the Pymatuning. It is often quite common during the spring migration but is rather uncommon during the fall. It frequents the marsh areas much less than do the Ring-necked Duck and the Lesser Scaup.

The Redhead usually arrives in this region by mid-March, the average date being about March 10. On February 28, 1946, I observed three males and two females at the Linesville spillway; Oudette saw it but one day later during the season of 1936. On March 4, 1936, I saw a raft of about thirty-five birds near the spillway and another of about the same number off the Espyville-Andover causeway. On March 22, 1941, I found it present in considerable numbers at various points on the Pymatuning. Twenty-five birds were seen in a bay north of Ford Island; and another group of twenty-five was seen at the Ohio end of the Espyville-Andover causeway on April 10, 1944 (Davis). During the latter part of March and the first week of April, 1947, it was rather common and often a hundred or more birds could be counted near the Linesville spillway. As a rule it is not common after the middle of April; but on April 20, 1940, I observed several along the Espyville-Andover causeway.

Fall migration records for the region are comparatively meager and indicate that the species is much less common at this season of the year.



Photo by U. S. Fish and Wildlife Service.

The Redhead is often common as a spring migrant.

Sutton (1928) gave a few records from the Conneaut Lake area. These ranged between October 3 (1909) and November 24 (1925). On November 7, 1940, Mr. Oudette reported that he had just seen a raft of about ninety birds near Ford Island. An immature male was taken in the region on October 18, 1941 by Mr. Ralph H. Ewing; and a solitary bird was seen in the refuge area on October 22, 1941 by Mr. Oudette.

The breeding of a few individuals of this species during the summers of 1936 and 1937 is a matter of record (Todd, 1936 and 1940). Since that time I can find no reliable evidence that it has bred anywhere in the region.

RING-NECKED DUCK

***Aythya collaris* Donovan**

Sutton (1928) said of the Ring-necked Duck, "although we have comparatively few actual records for this migrant species, it is probably considerably commoner than supposed". Within recent years, at least, it has been the most common of all of the diving ducks, usually outnumbering the Lesser Scaup. At times it becomes the most abundant species of duck during the spring migration. However, during the fall migration it is exceedingly uncommon, which leads to the suspicion that the birds follow a different route during that season.

The Ring-necked Duck arrives in this region early in March. The earliest date on which it has been recorded was on February 28, 1946,

when a male was seen at the Linesville spillway. The usual period for its arrival is between March 15 and March 20. On March 22, 1944, they were quite abundant at the Pymatuning, with many rafts containing several hundred birds each. Probably four hundred birds were present in the refuge area near the Linesville Spillway on March 30, 1947. During April it is often seen in large numbers, not only on the larger lakes but in the local marsh areas. A few stragglers often remain during the early part of May. At Conneaut Lake, Sutton observed three males and two females as late as May 15, 1925.

As in the case of the Redhead, fall records of the present species are very few, Sutton cited seven records from Conneaut Lake which ranged between October 15 (1926) and November 26 (1925). On October 5, 1940 we saw a lone male bird in the Hartstown marsh.

"In May of 1935 and May and June of 1936, mated pairs were observed in the sanctuary. On June 19, 1936, R. L. Fricke discovered a brood with a female that he felt certain was a Ring-necked Duck. Since the females of this species are easily confused with those of the Redhead, Mr. Todd secured permission to collect some ducklings from various broods. These were taken on July 2, 1936, and proved conclusively that both the Ring-necked Duck and the Redhead were breeding at Pymatuning Lake. It was estimated that about fifteen pairs of the former were present during the summer of 1936. That this was not a sporadic nesting, is attested by the presence of equally as many nesting pairs in 1937, 1938, and 1939" (Trimble, 1940). If the nesting was not sporadic, it was, at least, short-lived; for I found no evidence of the species breeding there during the summer of 1940 or during the summer of any subsequent year.

CANVASBACK

***Aythya valisineria* Wilson**

Sutton (1928) regarded the Canvasback as "a fairly common migrant, sometimes abundant—nearly always commoner than the Redhead". His records for the species all came from Conneaut Lake. Within recent years the species has certainly not been more common than the Redhead in the Pymatuning region. It is a regular migrant, sometimes tolerably common during the spring months; but it has been quite rare in this region during the fall.

The earliest date on which the Canvasback has been recorded was on February 28, 1946, when a male bird appeared at the Linesville spillway. The majority of our spring records are for the month of March although there are several for April. I observed four males and one female along the Espyville-Andover causeway on March 24, 1941; fourteen males and nine females at the same locality on March 28, and a raft of twenty or more birds on April 1 of the same year. On March

22, 1944 and on March 22, 1947, I observed numerous Canvasbacks among the mixed flocks of diving ducks which were present in the Pymatuning Refuge. Mr. C. B. Shoemaker found the species present on April 14, 1944. I observed a few birds as late as April 20, 1940 at the Espyville-Andover causeway. Mr. M. B. Skaggs saw three at the Pymatuning on April 26, 1936 (Todd, 1940).

Sutton stated that Mr. C. A. Bergstrom observed flocks of "a thousand or more" at Conneaut Lake on March 20, 1925, and that they were "present in multitudes" until April 9 or 10 of that year. A few birds lingered that season until June 6 according to Messrs. Langdon and Bergstrom. Within recent years there have certainly been no such mass flights of Canvasbacks anywhere in the region. It is one of our diving ducks whose numbers have seriously declined within the past two decades, not only in this region but throughout its entire range. I observed an individual on several occasions between July 14 and 20, 1940, in the Pymatuning Refuge.

Although Sutton considered the species as "quite common" during the fall migration and stated that it was often present "by the thousands" at Conneaut Lake, "almost up to the time of the freezing of the deepest waters", he actually had but few fall records from that area. It certainly has not been present by the thousands during recent years; as a matter of fact, it would be unusual to see a few hundred birds at a time. Sutton's records for fall ranged between November 5 (1926) and November 29 (1924). I did not record it myself, at the Pymatuning, during either the fall of 1940 or 1941. Skaggs recorded it there on November 15, 1935.

GREATER SCAUP DUCK

***Aythya marila nearctica* Stejneger**

Sutton (1928) considered the Greater Scaup to be "a regular and sometimes abundant migrant, particularly at Conneaut Lake". He recorded several specimens from that area taken between March 17 (1913) and April 20 (1910) during the spring, and between November 10 (1925) and November 22 (1922) during the fall. Sight records for this species are not reliable. According to Todd (1940), "Records for this scaup not based on the actual capture of specimens are inevitably open to question, since it is difficult or impossible to distinguish it in life from the Lesser Scaup, which is much commoner and more generally distributed during migration. For this reason most of the available records may justifiably be placed under the head of the Lesser Scaup, and some of the remainder may be questioned."

Undoubtedly the species occurs occasionally at the Pymatuning as well as at Conneaut Lake. Three individuals were taken during the banding operations at the Pymatuning during the springs of 1938 and 1939.

LESSER SCAUP DUCK

Aythya affinis Eyton

Sutton (1928) stated that this species was "a regular migrant, often more abundant than the (Greater) Scaup". While sight records for the two species are always open to question, by far the majority of the birds which have been collected in this region are certainly referable to the present species. It is far more common than the Greater Scaup, and I am certain that practically all of the sight records can be safely assumed to be for the Lesser Scaup. It is a fairly common migrant during the spring months but seems to be comparatively scarce in the fall; during some years exceedingly few are seen during the fall months. Within recent years it has never been as common in this region as the Ring-necked Duck with which it commonly associates during the migrations.

The Lesser Scaup arrives during March. The earliest recorded date being March 8, 1946, for a male bird at the Linesville spillway. During the spring of 1940 I did not see it until March 21, and in 1941 the first arrival was recorded on March 18. The peak of spring abundance usually comes early in the month of April, and it is commonly seen during the early part of May. On March 30, 1947, a number of birds were seen with the Ring-necked Ducks, Redheads, and Canvasbacks in the Pymatuning Refuge area. On April 10, 1944, Earl Davis estimated that there were about one hundred in a bay north of Ford Island, about fifty south of Ford Island, and about a hundred in a mixed flock of ducks at the Ohio end of the Espyville-Andover causeway. On April 22, 1941, I observed about twenty-five in a raft on Mud Lake, Hartstown, and numerous scattered birds elsewhere. During the spring migration the Lesser Scaup is often quite common on the shallow waters of the marsh areas at Hartstown, Smith and Conneaut Marshes, and on the small scattered ponds.

Individuals, or small groups of birds, are occasionally seen throughout the summer months. I believe that these are non-breeding birds for we thus far have no evidence of its breeding in the region. On June 5, 1941, I observed a group of two males and three females at the eastern end of Ford Island. I found occasional birds throughout the summer of 1941 until after the middle of August. Sutton stated that Mr. Langdon observed a flock of twelve birds at Conneaut Lake throughout the month of June, 1926. Hicks (1935) stated that it is presumed to breed in Ashtabula County, Ohio; but he also believed that most individuals which are seen in the summer are probably not breeding.

Although Sutton considered the Lesser Scaup as being common during the fall months, it does not seem to have been at all common during more recent years. I have seen them in but small numbers during the

months of October and November. On November 12, 1940, I observed a raft of scaups off the Espyville-Andover causeway which I believed were of this species. I saw a female bird with a flock of wild ducks at the Linesville spillway during the last week of December, 1941, but found no evidence of it later than that.

AMERICAN GOLDEN-EYE

***Bucephala clangula americana* (Bonaparte)**

Sutton (1928) regarded the American Golden-eye as "a fairly common and regular migrant, appearing early in the spring, and remaining late in the fall, and occasionally occurring as a winter resident when the water is open". The status of the species has apparently changed but very little since that time.

The American Golden-eye or "Whistler"—as it is commonly known by the hunters—has frequently been seen at the Pymatuning during the winter months of January and February, whenever the season is mild enough that there is some open water. On February 13, 1940, I observed three male birds at the Linesville spillway; January 24, 1941, one male; January 25, 1941, one male and two females; January 23, 1942, one male; and February 9, 1942, two males and two females.

In March and April the species is seen quite commonly. During these months, both in 1940 and 1941, I observed them almost daily about Pymatuning Lake. Their numbers varied from a few birds to flocks of thirty or more. Although they more often frequent the deeper waters of the large lakes, they are, nevertheless, often seen in the shallower marsh areas. On April 9, 1947, I observed at least twenty in the Harts-town marsh. I have occasionally seen the species during the first week of May, but there are other later records. Sutton found three females at Conneaut Lake on May 15, 1925; and quoted a record of Messrs. Bergstrom and Langdon for May 17, 1926. Mr. M. B. Skaggs observed two birds at the Pymatuning on May 8, 1937. Messrs Fricke and Seiple have recorded it in the same area on May 27, 1936. Mr. C. B. Shoemaker has Pymatuning records for May 21, 1943 and for June 1 of the same year.

It does not seem to be particularly common during the fall months. On November 11, 1941, I saw two males in the refuge area near Linesville. Sutton states that Mr. Welshons took a female at Conneaut Lake on September 2, 1912, which he believed to be a crippled or non-breeding bird, and a male on November 29, 1912. I observed a flock of twelve on Conneaut Lake, December 6, 1940.

BARROW'S GOLDEN-EYE

***Bucephala islandica* (Gmelin)**

On April 1, 1944, Mr. H. H. Harrison identified a male Barrow's Golden-eye with a flock of American Golden-eyes at the Hartstown Marsh. Sutton included the species in his hypothetical list, but he said there were two reports of male specimens having been taken at Conneaut Lake.

A more recent record, also in the Hartstown Marsh, is that of a male observed by Mr. John F. Mehner, Mr. John McCormick, and Miss La Rue Patterson on April 3, 1949. These observers all agreed that the bird had a purplish head with a crescent-shaped white patch in front of the eye.

BUFFLE-HEAD

***Bucephala albeola* Linnaeus**

Sutton (1928) gave the status of the Bufflehead as "a common and regular migrant both in spring and fall, not only at Conneaut Lake, but at the smaller bodies of water". At the Pymatuning, Mr. R. L. Fricke considered it to be a rather rare species prior to 1936. Of recent years this little duck has been a regular and tolerably common migrant. It is apparently much more common in the spring than it is during the fall migration.

In the spring it seldom arrives in the region before the latter part of March. The earliest date on which it has been recorded is March 9, 1939 (Oudette). My dates for first appearances between 1940 and 1947 range between March 16 and 27. The main flight ordinarily takes place during the month of April, during which month it has been recorded a number of times every year. On April 10, 1944, Mr. Earl Davis found fifteen males and five females at the Ohio end of the Espyville-Andover causeway. On April 12, 1946, I saw a number in the Pymatuning Refuge. On April 19, 1947, we observed about fifteen birds in the marsh at Hartstown and witnessed the courtship of the bird. Trimble (1940) found them fairly numerous in the Pymatuning Refuge area on April 24, 1938. On April 27-28, 1940 she saw a few birds both in that area and at Hartstown. A few birds frequently remain in the region until about mid-May during most years. I observed occasional individuals in the refuge area until May 14, 1940, and until May 6, 1941. Two were seen in the Pymatuning area on May 8, 1937 (Trimble, *vide* Skaggs). Sutton (1928) mentioned seeing a flock of eight at Crystal Lake, Hartstown, on May 6, 1922.

The fall migration takes place during the latter part of October and throughout the month of November. The earliest date is that given by Sutton of a female specimen taken at Conneaut Lake, October 19, 1925, by Mr. Bergstrom. Trimble (1940) recorded a few birds at the Pymatuning Refuge on October 23, 1946. I observed three birds on a pond at the Pymatuning Fish Hatchery on October 27, 1941. On

November 15, 1940, I saw about fifteen in a bay south of the Linesville spillway. Trimble saw two females on November 7, 1937, and she stated that two birds were seen November 15, 1936, by Mr. M. B. Skaggs. On December 2, 1940, ten birds were present off the Espyville-Andover causeway; and on December 11, 1941, I observed a few with other ducks in a bay just south of the Linesville spillway.

OLD SQUAW

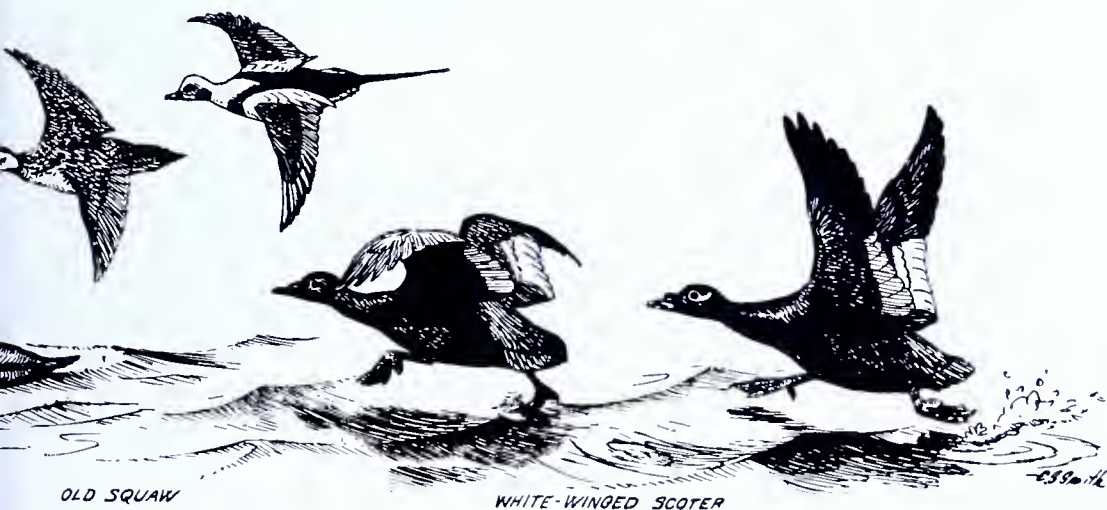
Clangula hyemalis (Linnaeus)

Records for the Old Squaw in the Pymatuning region within recent years are very meager. It has been recorded occasionally during both the spring and fall migrations, but the records are for single birds or very small groups. The fact that the bird prefers the deeper waters and ordinarily remains far from shore may mean that it is often overlooked. Perhaps it is more common than is generally supposed. Some of the records given by Sutton (1928), from Conneaut Lake, naturally leads to the suspicion that the bird must have been much more common in the region years ago than it has been during recent times. He stated that on March 8, 1908, Mr. Welshons and his party shot seventy-eight birds at that place; Mr. Langdon observed a flock of over five hundred birds on April 15, 1926; and he quoted Mr. Kirkpatrick as saying the species was very abundant at the lake from April 12 to 19, 1907, and that large numbers were shot by gunners.

On April 26, 1940, Messrs. Sickles, Oudette and I came across a group of three birds out in the deeper portion of the Upper Lake, one of which was a male bird in beautiful adult plumage.

Trimble (1940) saw a female Old Squaw with a flock of scaups at the Linesville spillway on April 6, 1937. Mr. C. B. Shoemaker observed one in this same general locality on April 7, 1940 and on April 26 of the same year.

On November 11, 1940, a female was taken by a hunter in the Pymatuning Lake area (Oudette). Near the Ohio end of the Espyville-Andover causeway on November 26, 1940, I observed a solitary female.



OLD SQUAW

WHITE-WINGED SCOTER

WHITE-WINGED SCOTER *Melanitta fusca deglandi* (Bonaparte)

Sutton (1928) considered the White-winged Scoter as a "fairly common migrant and occasional winter resident, apparently by far the commonest of the scoters in this region". There are a few records for this species at the Pymatuning Lake where, thus far, it has been the only species of scoter recorded. Its occurrence in the region is very apt to often go unrecorded as it habitually frequents the deeper waters, usually far from shore.

Sutton stated that Mr. Langdon saw numerous scoters at Conneaut Lake on March 20, 1925, "most of which were certainly of this species". He gave several spring records from that locality ranging between March 20 (1925) and March 28 (1926). Mr. Welshons took a male bird at Conneaut Lake on September 11, 1910 which is the earliest date on which it was known to occur there during the fall. The majority of Sutton's fall records from that locality were between October 18 (1926) and December 1 (1917). Mr. Bergstrom is said to have seen several flocks there on November 14, 1925,

Sutton (1929) told of the capture of a male bird from a flock of five scoters that alighted on Crystal Lake, Hartstown, in the fall of 1928. Mr. Floyd B. Chapman (1937) saw seven birds on the Pymatuning Lake, near Linesville, May 16, 1936. On April 10, 1941, I observed a solitary bird about mid-way across the Espyville-Andover causeway and about two hundred feet from the embankment. Mr. C. B. Shoemaker and I saw four birds, two of them in adult male plumage, off the causeway on May 3 of the same year. The species was again recorded on May 10, 1942, by members of the Pymatuning Group.

SURF SCOTER

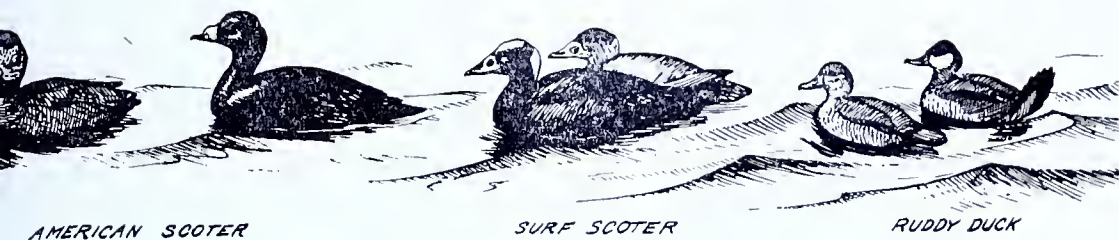
***Melanitta perspicillata* (Linnaeus)**

Sutton (1928) rated the Surf Scoter as "a rare migrant, apparently the rarest of the scoters in the present region". Mr. Bergstrom secured female specimens from a large flock of scoters at Conneaut Lake on October 4 and 18, 1925. Mr. Keesler took an adult female on October 24, 1925 and a male on November 10, 1915. Mr. Welshons took three males on November 4, 1926.

AMERICAN SCOTER

***Oidemia nigra americana* Swainson**

According to Sutton (1928) the American Scoter was "a rare but fairly regular migrant, which may occasionally occur in winter, when the deep water is free from ice". He recorded specimens taken at Conneaut Lake as follows: an adult female by Mr. Welshons, March 21, 1912; an adult male by Mr. Bergstrom during the fall of 1923; a young male by Mr. Keesler, November 9, 1925; and an undated



AMERICAN SCOTER

SURF SCOTER

RUDDY DUCK

female specimen in Mr. Welshon's collection. Mr. Langdon observed several males (and presumably females) at that locality between April 8 and 22, 1926 and on April 16, 1925.

RUDDY DUCK

Oxyura jamaicensis rubida (Wilson)

Sutton (1928) rated the Ruddy Duck as "a common migrant, said to be much more numerous in fall than in spring, although we have many more spring than fall records". Within recent years it has been a regular migrant, usually tolerably common during both the spring and fall migrations. It has, in addition, also been recorded as a breeding species at the Pymatuning within recent years.

In the spring the little Ruddy Duck seldom arrives before the month of April. Sutton quoted March records for the species; March 9, 1918, at Hartstown (*fide*, Hunter); March 15, 1925, at the same locality (*fide* Langdon); and a specimen taken at Conneaut Lake, March 25, 1913 by Mr. Welshons. The earliest date on which I have personally observed it was April 4, 1940. On April 6, 1946, I noted one again at the Linesville spillway. April records for the species are quite numerous. Mr. Earl Davis saw fifteen birds just south of Ford Island, April 10, 1944. On April 20, 1947 we saw rather sizable rafts of Ruddy Ducks off the Espyville-Andover causeway. I observed a raft of about forty-five in the refuge near the Linesville spillway on April 22, 1941. By far the largest raft of them that I have ever seen in the region was the one present during the afternoon of April 15, 1946 in the Pymatuning refuge. The raft extended in a wide arc from the eastern end of Ford Island to a point beyond the Linesville spillway and certainly contained upwards of two thousand individuals. The following day hardly a bird of the species was to be seen in the vicinity.

It is often recorded quite late in the spring. During the latter part of May, both in 1940 and 1941, I observed it on a number of occasions. Mr. Shoemaker found a few birds still present on May 21, 1943 and Trimble (1940) observed eight males in the refuge area on June 7, 1936. Such late spring and summer records for this species are not new. Sutton stated that Mr. Kirkpatrick found a small flock near Wolf Island, Conneaut Lake, from June 28 to July 3, 1897. Mr. Langdon saw several birds as late as June 6, 1925 at Conneaut Lake, and the following year he saw occasional birds until July 3. On July 26, 1940 I came across three birds in the Pymatuning Refuge, one of

which was a brightly-plumaged male. A flock of four were observed at Conneaut Lake on August 3 and September 16, 1926 (Sutton, *vide* Bergstrom).

The first indications that the birds were actually breeding in this region were noted during 1935 when Dr. Hicks (1935) observed two broods of flightless young on the Pymatuning in Ashtabula County Ohio. Trimble (1940) stated that during early July of the same year Mr. J. K. Terres saw a brood in the Linesville section. Mr. R. L. Fricke was first to actually discover a nest of the bird. On June 19, 1936, he located a nest which was built in a clump of bur-reed (*Sparganium*) standing in some eighteen inches of water. At the time of his discovery it contained but four eggs. On June 22 there were seven eggs in the nest which he collected for the Carnegie Museum. I have not found any evidence that the species has continued to nest in the region within more recent years. Mr. H. H. Harrison observed two males "loafing" on the west shore of Conneaut Lake on June 10, 1947, but searched in vain for nests.

The fall migration apparently takes place during October and November. Sutton gave dates for Conneaut Lake ranging between October 1 (1925) and November 26 (1925). According to Mr. Bergstrom the species was abundant in that locality from October 1 to 25, 1925. Mr. Keesler took a male and a female from a large flock present there on November 17, 1924. Within recent years I have heard of fairly large rafts of Ruddy Ducks being present at Conneaut Lake during the late fall. Mr. William Jackson told me that there had been a good flight on November 15, 1940. On October 3, 1940, I saw three at the Pymatuning Refuge; and on October 10, 1941, I observed several small flocks at that place. During the latter year I observed an occasional bird until December 11, just prior to the freezing over of the lake.

HOODED MERGANSER

Lophodytes cucullatus (Linnaeus)

The Hooded Merganser was regarded by Sutton (1928) as "a fairly common migrant, both in spring and in fall". Within recent years it has been a regular transient in the region, tolerably common both during the spring and fall migrations. There are occasional records for the winter months. Sutton had records for French Creek and the Conneaut Lake Outlet for December 14, 1897; December 16, 1912; and February 21, 1897 (*vide* Kirkpatrick). I observed a male and two females on Linesville Creek near the refuge boundary on December 1, 1940; a few birds with some other ducks at the Pymatuning Refuge on December 11, 1941; two females at the Linesville spillway on January 5, 1946; and a male at the same location on February 28, 1946.

This little duck is recorded every year during the month of March with peak numbers occurring between mid-March and mid-April. Most

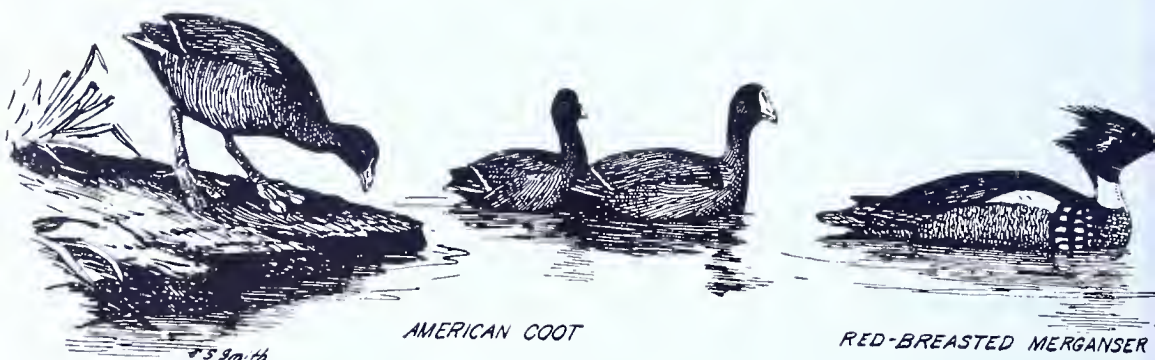
of the records pertain to single birds or to flocks of twenty or less. They often associate with other species of ducks, particularly the pond ducks, and are more frequently seen in the shallow water of the bays and in marsh areas than are the other species of mergansers. While I have never observed it in the spring later than the last week in April, Sutton recorded it at Hartstown on May 20, 1922 and he gave a record of Mr. Landon for a pair seen at Conneaut Lake as late as June 17, 1926.

Sutton stated in his report that "some parts of the Pymatuning are so admirably suited to the nesting of this species that I believe we may reasonably expect it to be recorded as a breeding bird". Dr. Hicks (1945b) was the first to actually establish a breeding record in the region. "During the 1937 breeding season, a pair was present on my waterfowl-study tract on Pymatuning Reservoir, Ashtabula County, Ohio. The female was seen to enter the cavity of a very rotten stub which leaned far out over the water of a little inlet near Hemlock Island. Since it was impossible to reach the nest without destroying it, we waited until the family of young had left to pull down the stub and break open the nest, which contained but a single eggshell. On May 30, the hen had eight ducklings (about six days old). When last seen on June 30, only three remained. During the 1938 season, Bert Oudette, the writer and several others observed another female using a cavity on the Pennsylvania portion of the reservoir." Within more recent years I have not observed the species present during the summer months and I know of no more recent records for this duck's nesting in the region.

The fall migration takes place during the months of October and November and a few stragglers may be seen until the early part of December. On October 10, 1941, Mr. E. G. Musser and I observed but a single bird in a bay near Linesville. Their numbers seemed to gradually increase until on November 4 at least one hundred and fifty were present in the same locality. During most falls they seemed to become fairly common by the first of November.

Messrs. Ross, Calvin, Segan, and Mehner counted 100 individuals on the refuge lake on November 13, 1949.





AMERICAN MERGANSER *Mergus merganser americanus* **Cassin**

Sutton (1928) stated that the American Merganser was "a fairly common migrant, appearing early in spring, remaining late in fall, and doubtless occurring irregularly in winter, when there is suitable open water". I cannot see that its status has changed very much within recent years.

The only winter record actually mentioned by Sutton was a flock of twenty birds seen along French Creek, near Meadville, January 5, 1882 (*vide* Kirkpatrick) but undoubtedly the bird was often present in the immediate region of Conneaut Lake. It has been recorded on numerous occasions in the Pymatuning region within recent years. Between January 22 and February 22, 1941, I observed from two to eleven individuals almost daily between Linesville and the spillway of the Upper Lake. On January 20, 1942, I saw seven males in that locality; and on February 28, 1946, I observed a flock of about thirty birds most of which were adult males. It usually remains fairly common during the spring season until the latter part of March or early April. As a rule it frequents the deeper waters. It is commonly seen off the Espyville-Andover causeway during migrations. In late March and early April of both 1946 and 1947, it was not unusual to see rafts of from fifty to a hundred or more birds at that place. On April 10, 1944, Earl Davis saw a pair of birds in the refuge area and three additional pairs in the vicinity of the causeway. It declines rapidly in numbers after mid-April.

Records during the fall migration are far less numerous than they are for the spring. I have never seen it earlier than the first part of November. On November 12, 1940, I observed a small flock off the Espyville-Andover causeway. Oudette reported seeing a few near Ford Island on November 12, 1941. On December 2, 1940, I observed a flock of at least one hundred on the lake near Espyville.

A male was observed at Harris Island on June 24, 1949 by Mr. John F. Mehner. It was seen by a number of people during the next two or three weeks, but it was not observed to fly.

RED-BREASTED MERGANSER

Mergus serrator Linnaeus

Sutton (1928) regarded the Red-breasted Merganser as "a fairly common and regular migrant, noted particularly at Conneaut Lake". Within recent years, especially at the Pymatuning Lake, it has been a tolerably common migrant which seems to be somewhat more common during the spring migration than the fall. It sometimes occurs on the smaller bodies of water such as the lakes about Hartstown.

Oudette (1939) recorded this species at the Pymatuning on February 21, 1939; but ordinarily it does not appear before early March and often not until the middle of that month. It usually does not become common until early April. I found it to be quite common nearly everywhere about the Pymatuning on April 3, 1941. Earl Davis saw sixteen birds at the Ohio end of the Espyville-Andover causeway, April 10, 1944, and other smaller groups or scattered birds about the lake. During the latter part of April it supplants the American Merganser to a large extent on the open stretches of water. Flocks of two dozen or more birds are commonly seen in the vicinity of the Espyville-Andover causeway during late April. It remains considerably later in the spring than does the American Merganser. I observed occasional birds as late as May 10, 1941, and between May 27 and June 2, 1942. Sutton stated that Mr. Langdon observed two pairs at Conneaut Lake between June 1 and 15, 1926. The species has not been known to breed in this region, and these late records are very probably for belated migrants or non-breeding individuals.

On April 26, 1940, we observed a female in the refuge area which seemed, even at a distance, to be in very poor physical condition. The bird was dispatched when it was found that a seven-inch bullhead was lodged in its mouth. One of the fish's pectoral spines had penetrated the base of the bird's lower mandible and the other protruded through one of its cheeks. It had evidently had the fish in its bill for several days and it was utterly unable either to swallow or to disengage its finny prey.

The fall migration of the Red-breasted Merganser apparently takes place during November, but actual records are meager. On November 19, 1940, I observed fifteen near the Linesville spillway. About fifty were seen on November 12, 1941, in the Pymatuning refuge.



Immature Cooper's Hawk.

Photo by Karl M

EASTERN TURKEY VULTURE

***Cathartes aura septentrionalis*
Wied**

The Turkey Vulture, or Buzzard, as it is more often called, is a common summer resident of the region although there seem to be rather definite local points of concentration. It seems very probable that the population of this bird has increased during the past twenty years. Sutton (1928) stated that he had never seen more than fifteen or twenty at once flying over the Pymatuning Swamp area. During the past several years it has been quite common to see between twenty and fifty of them circling above the swamp area between the Blair Bridge Road and Hartstown. On one occasion, along a fencerow separating fields on the eastern side of the swamp, I saw at least forty birds, each perched atop a fencepost with outstretched wings, turning slowly to get the fullest benefit of the early morning sunlight. Large numbers are frequently observed in the Black Jack region to the south of Pennline and about the Jumbo Woods to the northward of the Pymatuning.

Vultures arrive in this region very early in the spring, and nearly every year they have been recorded between the middle and the end of March. The earliest date on which it has been recorded was March 1, 1946, near Pennline (J. G. Crumb). On March 6, 1946, I observed three flying over the marshy area near the Blair Bridge on Route 285. On March 19, 1941, Mr. Crumb told me he had observed twenty present near his home about two miles south of Pennline. It is commonly observed throughout the summer months, but usually it migrates south by mid-October. I saw an occasional bird during the fall of 1940 until October 23.

Mr. Carlyle Sheldon told me that for several summers he had seen a pure albino individual among the birds in the vicinity of the Jumbo Woods. Vultures are seen regularly in the vicinity of the Great Blue Heron rookeries, and suspicion has been attached to the bird as a possible cause of the desertion of several nesting sites by the herons. The large amount of food dropped from the nests, together with the bodies of young birds which occasionally fall from them, undoubtedly constitutes a major attraction to this carrion-eating bird.

Mr. R. L. Fricke took a set of eggs of the Turkey Vulture near Linesville, May 10, 1935, which were about one-quarter incubated. The nest consisted of a few small twigs and bits of bark placed under the root end of a fallen tree.

EASTERN GOSHAWK

***Accipiter gentilis atricapillus* (Wilson)**

The Goshawk is apparently very rare and exceedingly erratic in its occurrence in the Pymatuning region. Sutton cited a few records as follows: a male taken by Mr. Kirkpatrick near Meadville, December 18, 1906; an individual seen at Conneaut Lake by Mr. Bergstrom,

January 5 and 8, 1926; several seen in the Pymatuning region between January 13 and 24, 1926 (*vide*, Langdon); and one seen by Sutton himself, north of Hartstown, February 20, 1925.

I have never seen the bird in the present region.

SHARP-SHINNED HAWK *Accipiter striatus velox* (Wilson)

Sutton (1928) said that "while the Sharp-shinned Hawk sometimes occurs throughout the year, it has been chiefly observed as a migrant in April and May and in the middle of autumn". He cited several records for the species during the season of migration. On June 16, 1923, he found a nest about one mile southwest of Linesville. "The broad and beautiful structure was finally found thirty feet up in a dense hemlock. It contained five small young and a broken egg which may have been destroyed by a Crow. The tree in which the nest was located was one of a dense clump growing at the edge of the swamp".

Although Sutton considered this species to be sometimes very abundant during the fall migration, my experience has been to the contrary. On April 16, 1941, I was accompanying Mr. F. W. Bauder when he shot a male bird, just passing into the adult plumage, at Hartstown. On October 9, 1941, Mr. E. G. Musser and I observed one near the site of the old humus plant about one and a half miles north of Hartstown. Members of the Pymatuning Group have recorded it on April 21, 1940, and again on May 3-4, 1941.

COOPER'S HAWK *Accipiter cooperii* (Bonaparte)

The Cooper's Hawk is a common permanent resident although peak numbers are reached during the spring and fall migrations. It has been frequently recorded during every month of the year and in every portion of the region. I believe that it is the most common species of hawk to be found here, but because of its secretive habits it is seen less frequently than the larger Buteos and the Marsh Hawk.

On Ford Island I have frequently flushed individuals from their retreat in the pine thickets which afford them an ideal retreat from which to sally forth and pounce upon their feathered prey. Mr. Raymond M. Sickles considers it to be the most serious predator of such game birds as the Ruffed Grouse, Ring-necked Pheasant, and Bob White Quail. My observations tend to support his contention. On numerous occasions I have observed them in hot pursuit of small songbirds and have seen individuals carrying small birds in their talons. I do not believe that the pole trap which some advocate for the control of "injurious hawks" is at all effective in the control of this species for it seldom perches anywhere except in the thickest of foliage. Such traps are far more apt to catch the larger, and mainly beneficial species of hawks, so I am strongly inclined to look upon them with disfavor.



Red-shouldered Hawk with snake.

Photo by Karl Maslow

Nesting generally takes place during the month of May. Sutton found a nest at Hartstown with four eggs, May 14, 1922; and another two and a half miles northwest of that place with five eggs, on May 16, 1925. Mr. Fricke found a nesting pair in Peck's Woods, about one and a half miles west of Linesville, May 7, 1940. These nests were located at heights varying between twenty-five and sixty feet and were all in beech trees.

EASTERN RED-TAILED HAWK

***Buteo jamaicensis borealis*
(Gmelin)**

In this region the Red-tailed Hawk is a rather uncommon permanent resident. Although it is recorded during every month of the year, it was only seen occasionally; and the number of birds seen was never more than two or three on any given day. It is much less numerous than the Red-shouldered Hawk, but undoubtedly it was formerly much more common than it is at the present time.

Sutton (1928) states that he collected a well incubated set of three eggs from a nest in the top of a pine tree near Atlantic, March 30, 1926. On May 7, 1922, he observed a pair nesting in a black birch tree on Cherry Island, just south of Hartstown. Mr. Fricke and I flushed a female bird from her nest in Peck's Woods, about one and a half miles west of Linesville, May 7, 1940. This nest was placed

about forty feet above the ground in a large beech tree. Mr. Raymond M. Sickles told me that a pair nested in one of the large oak trees at the eastern end of Ford Island during the spring of 1945. During July and August, 1940, I repeatedly observed a pair near the Shermansville end of the old corduroy road. I again saw a pair there on February 5, May 16, and November 26, 1941. I am inclined to believe that they nested somewhere in that vicinity.

During the winter months the Red-tail is the only species of *Buteo* that regularly occurs in the present region. It seems to become somewhat more common during the early part of February which indicates that the northward migration begins about this time of the year.

NORTHERN RED-SHOULDERED HAWK *Buteo lineatus lineatus* (Gmelin)

The Red-shouldered Hawk is a rather common summer resident of the Pymatuning region. Sutton (1928) gave a few winter records for it in the region, but I have never seen it within recent years between late October and the latter part of February. The earliest date that I have seen the bird was on February 27, 1946, when a pair was seen in the swamp about one and a half miles north of Hartstown. During recent years their numbers have remained fairly constant from year to year. Sutton said that "during 1922 the Red-shouldered Hawk was the only species of hawk which was considered really abundant in the wooded sections of the swamp. During subsequent years it was found to be not nearly so common, and in 1925 was apparently quite rare."

Sutton found two nests of this species near Hartstown on March 28, 1926, one of which was built in a dead pine. It was heavily lined with fresh hemlock branchlets and contained one fresh egg. Other nesting dates which he recorded from Hartstown are as follows: April 27, 1922, a nest in a beech tree with four much-incubated eggs; April 29, 1922, one in a red maple, about fifty feet from the ground, containing three eggs; and May 30, 1924, one containing half-grown young birds.

On May 17, 1940, Mr. Crumb showed me a nest in the "sugar bush" on his farm south of Pennline. It was built in a large beech tree at a height of approximately twenty feet from the ground; and on that date it contained five eggs. When I revisited the nest on June 5, it contained four downy young birds and one unhatched egg. A pair nested in a large red maple on McNutt's Knoll, just inside of the refuge wire, during the spring of 1945 and again during April 1947.

On May 5, 1946, I found a nesting pair in a small tract of woodland about one-half mile north of Linesville. This nest was in a large beech, placed in a crotch about forty feet from the ground. Invariably the nests are lined with fresh hemlock boughs

BROAD-WINGED HAWK *Buteo platypterus platypterus* (Vieillot)

In the present region the little Broad-winged Hawk sometimes occurs as a migrant, but it has never been common. It is a fairly common summer resident of the hilly and mountainous country to the eastward. Sutton (1928) presented no records for the bird in this immediate region; and I have no records of my own, even during the spring and fall migration seasons. Mr. C. B. Shoemaker recorded it once, on September 21, 1945.

Messrs. Robert Calvin and John F. Mehner observed two soaring above the Hartstown Swamp on September 5, 1949.

AMERICAN ROUGH-LEGGED HAWK *Buteo lagopus sancti-johannis* (Gmelin)

The Rough-legged Hawk is a very rare winter visitant in the Pymatuning region. Sutton (1928) presented but one record for the region proper, a male bird in the normal light phase of plumage which was taken by Mr. Welshons at Conneaut Lake, November 22, 1924. He also cited records of a bird of the black phase which was taken near Cochrantown, November 26, 1925, and one of the normal light phase which was found crippled about two miles south of Greenville, November 28, 1926. Both of these latter records are extralimital.

On January 24, 1940, I observed a very large buteonine hawk in flight over the frozen marsh and lake of the Pymatuning Refuge area. As I watched the bird, it occasionally hovered after the manner of the Sparrow Hawk. I observed this bird, or at least I presumed that it was the same individual, on a number of occasions until nearly mid-March and identified it as a Rough-legged Hawk of the light phase of plumage.

GOLDEN EAGLE *Aquila chrysaëtos canadensis* (Linnaeus)

There is but a single valid record for the Golden Eagle in the present region. Sutton (1928) states that he saw "the feathered feet of a specimen—nailed to an old barn a little east of Stewart's Corners, a few miles west of Pymatuning Swamp. This is about a mile south of the present Pymatuning Refuge.



Nest of Bald Eagle in Pymatuning Refuge, January 10, 1942. *Photo by the author.*

NORTHERN BALD EAGLE

***Haliaeetus leucocephalis*
washingtonii (Audubon)**

Sutton regarded the Bald Eagle as "an occasional visitor, commonest during the spring and summer"; but he states that it was said, on good authority, to have formerly nested in the region. I have heard, too, that in former years a pair of eagles nested in the Pymatuning Swamp to the west of Linesville, but I have been unable to get more definite data as to the years during which this nesting occurred. Since the creation of the Pymatuning Reservoir, at least one pair of Bald Eagles have nested regularly in this vicinity.

The first nest was built about 1937, in a large, dead elm tree on a tiny island which was submerged by the waters of the Upper Lake. There were about fifteen trees standing on this little knoll in the swamp, most of them being hemlocks; and all were killed by the impounded waters. It was located in the refuge about three-quarters of a mile northeast of Ford Island and for several seasons was a prominent landmark. The nest was used annually by the birds until it blew down during a storm on June 28, 1941. The two nearly fledged young were rescued from the water by Mr. Oudette and were later consigned to the zoological gardens at Harrisburg.

The two old birds remained in the vicinity throughout the summer and fall months and were frequently seen perched on the gaunt snags which surrounded the nesting tree. On November 9, 1941, Mr. Oudette told me that he had seen one of the adult birds carrying nesting material to the old nest site; and when I investigated on November 12, it was plain to see that a new nest was being built in one of the adjoining trees. On January 10, 1942, I crossed the ice and examined the nest which was then a fairly large structure, built in the crotch of what appeared to have been a dead elm, about forty feet above the base. A large number of old corn stalks had been utilized in its construction. This structure was demolished during a storm on June 15, 1942; and it is believed that the young were lost.

Still a third attempt was made by the birds to construct a nest in this little group of snags, this time at the top of one of the dead hemlocks about forty feet above the ground. Harrison (1943a) described a visit which he and Messrs. Shoemaker and Oudette made to the nesting site on June 3, 1943. The nest, a structure about four feet in diameter, contained two downy young which Mr. Oudette estimated to be about three weeks of age. Nesting apparently got under way late that season for Harrison stated that it was still under construction on March 28. These three observers agreed that its position was a precarious one and feared that it would not be a permanent affair. That prophesied disaster took place during the winter of 1945, and the birds abandoned that particular nesting site.

On March 17, 1946, I observed an adult eagle carrying nesting material to a small wooded island in the refuge area about a quarter of a mile east of Ford Island. Later in the month we investigated and found that a new nest had been built in the crotch of a beech tree close to the water's edge. It was about three feet in diameter and about forty feet above the ground. On April 11, Mr. Robert Ford reported that there were two eggs in the nest. About a week later he climbed the tree and found that one of the eggs had been broken, apparently by a crow. He believed that the bird had deserted it. Not long afterwards this half-dead tree split during a storm and the nest toppled into the water.

During the spring of 1947 no nesting activity was observed anywhere in the refuge area, but in early May Mr. Sickles received a report that a pair of eagles were nesting along the western edge of the swamp about two and a half miles north of Hartstown. On May 30 Mr. Sickles and I visited this nesting site. Both parent birds were present; and they circled about, uttering piercing cries, as we approached. The nest was located in the top of a large and living white pine tree. The young birds seemed fairly well developed although they still showed some down. This nest is said to have been blown out of the tree during a storm in the month of July, but the young were believed to have been well enough developed to survive. In the spring of 1948

a pair built a nest in the Pymatuning Refuge again, this time on a wooded island west of the corduroy road.

I cannot quite understand the significance of the female bird in immature plumage which was seen on the nest by Messrs. Harrison, Shoemaker, and Oudette in 1943, for the pair of birds which I repeatedly observed about the nesting site in 1941 were both in full adult plumage, with white heads and tails. Christy (1941a) quoted some data which was furnished to him by Mr. Oudette which does not agree with my own observations for the spring of 1941. On February 10, 1941, I saw two fully adult eagles at the nesting site for the first time since the latter part of November, 1940. None were apparently present during the interval, for I looked for them almost daily. The two adult birds were seen almost constantly throughout the spring and were the only birds seen at any time either on, or very near, the nest. Although we have never located more than one nest during any given year, there still remains the possibility that at least another nesting pair may eventually be found somewhere in the region.* During the late spring of 1947, Mr. J. Glenn Crumb told me that a pair of adult eagles had recently been seen in the Black Jack area, about four and one-half miles northwest of Linesville.

Practically every summer season, in the refuge area alone, it has been common to observe a half dozen or more Bald Eagles, most of which were in the dark immature plumage. Trimble (1940) stated

* I am informed by Mr. R. M. Sickles that a nest has been present for several seasons in the Conneaut Lake Outlet Marsh.

Eaglets about ready to leave the nest.

Photo by W. Byrant Tyrrell.



that on August 26, 1938, her party counted no less than twenty-two birds in that area at one time, a goodly number of which were white-headed adult birds. On a later date, she said that Mr. Oudette actually counted twenty-eight birds present. I have frequently seen ten or twelve at a time during later years. On August 8, 1941 I observed three adult birds and one immature about the floating islands near the southeastern end of Ford Island.

There is a very strong possibility that at least some of these summer visitors in the area may belong to the southern race of the Bald Eagle, *Haliaeetus leucocephalus leucocephalus* (Linnaeus). A young bird which Mr. Charles S. Broley banded in the nest at Venice, Florida, February 18, 1944, was found dead at North Springfield, Erie County—less than thirty miles directly north of Linesville—on July 29 of the same year. Mr. Broley's data (Wilson Bulletin, 59: 3-20) plainly indicates that there is a rather general northward movement, at least of the immature birds of this southern race, during late summer and early fall.

The principal bill of fare of the local eagles is fish which they pick up dead along the shoreline of the lake. When the birds remain during the winter months, I believe that they subsist largely upon other carrion. On April 30, 1940 I came upon two immature birds which were apparently having quite a skirmish in the middle of an old road on the northern side of the refuge area. They had attacked a large carp which had exposed itself in trying to cross a shallow drainage ditch connecting a pond on the one side of the road with an arm of the lake on the other. On March 7, 1941 I observed several Herring Gulls on the ice at the Linesville spillway, one of which was eating a freshly caught fish. As I watched them, two adult Bald Eagles glided down, scared off the gulls, and one of them deftly grabbed the fish which the gulls left behind on the ice. A few days later, on March 12, I observed what I assumed to be the same pair of eagles feeding on the carcass of a red fox a hundred yards or so out on the frozen lake near the spillway, while a number of crows walked about disconsolately at a discreet distance.

While the flocks of ducks and geese always took wing whenever one of these big birds of prey came too close. I have never seen an eagle deliberately attempt to catch any of the birds. However, under date of January 21, 1948 Mr. Raymond M. Sickles writes me that three eagles have been creating quite a disturbance among the ducks and Canada Geese, molesting them at the open water hole where they come to feed. "This morning", says Mr. Sickles, "I saw them diving at the geese in this water hole. They did not take wing but would submerge whenever one of the eagles made a pass at them."

MARSH HAWK

Circus cyaneus hudsonius (Linnaeus)

The status of the Marsh Hawk has apparently changed little during the past two decades. Sutton (1928) considered it to be "an abundant transient visitant and summer resident" and he added that "as a winter resident it is comparatively rare". Perhaps next to the Cooper's Hawk this harrier is the most common hawk in the present region. It is frequenting seen cruising at a low elevation over the marshes and open fields.

The Marsh Hawk is seen occasionally during the winter months of some years while it may be entirely absent during others. Sutton observed one at Hartstown between February 18 and 20, 1925; and he said that Mr. Langdon saw several at Conneaut Lake on December 5, 1925, and two as late as December 25 of that same year. I observed one at the Pymatuning Refuge on December 9, 1945, and another on January 29, 1942. The latter bird was seen to pursue and repeatedly dive at a Bald Eagle. Mr. Raymond M. Sickles has told me that he has observed them rather frequently during the winter months within the past few years. Migrating birds begin to arrive by mid-March, and the species becomes common about that time. They are present in considerable numbers during the summer months and are usually common until the latter part of October.

On the morning of March 31, 1941, I was privileged to witness an exceptionally fine courtship performance in a marshy area of the Pymatuning Refuge. The male bird, a beautifully-plumaged individual, ascended in a steep bank to a height of sixty to eighty feet, described a complete wing-over, then dropped earthwards in a sort of wild and fantastic tailspin. When within but a few feet of the ground, he righted himself, zoomed upwards, and repeated the performance time and time again. On the morning of April 25, 1941 I witnessed another performance of the bird, about which I had read but had never actually witnessed. I was in a small marshy area a short distance south of the Blair Bridge road when I saw a female Marsh Hawk rise into the air. Within a few seconds a male bird appeared holding a meadow mouse in his talons. He flew toward the female bird, banked, and ascended some thirty or forty feet above her, then dropped the mouse. It plummeted earthwards, but the female bird deftly caught it in mid-air and flew off into the marsh.

It was in the same locality that I watched the mouse-catching episode that Mr. Fricke and I found a nest of the bird on the following May 8. It contained five eggs. On May 17, 1940 we found a nest in a little marshy area south of Pennline which contained four eggs. On May 16, 1946 Mr. Sickles and I found a nest in a small swale area in a field about four miles north of Pennline. It contained five eggs on that date. On June 15, 1947 Mr. H. H. Harrison found a male bird incubating four eggs in Conneaut Marsh.

OSPREY

***Pandion haliaëtus carolinensis* (Gmelin)**

Sutton (1928) considered the Osprey, or Fish Hawk, as "regular and common at Conneaut Lake and Pymatuning Swamp" and he said that "while there is no evident reason that the Osprey should not nest in the present region, apparently it does not". I would not say that the Osprey has been at all common in the region within recent years although it has been recorded fairly regularly, particularly during the spring migration.

The earliest date on which it has been recorded in the spring was at Conneaut Lake, April 2, 1926, where it was seen regularly until April 23 (Sutton, *vide* Langdon). It was also recorded there daily between April 30 and June 1, 1924 (Sutton, *vide* Langdon and Bergstrom). During the season of 1926, Mr. Langdon observed one at the same locality on June 3, June 15, and throughout the month of July. Sutton also cited the taking of a male specimen at the Meadville Junction Pond on May 26, 1925.

Our recent spring and summer records for it are as follows: one seen at Pymatuning Refuge, April 21, 1940; one observed almost daily in the refuge area, near Linesville, June 1940; one seen in refuge area, May 18, 1941; and one seen in refuge area, April 11, 1946 (R. M. Sickles).

Sutton quoted several fall records for the vicinity of Meadville. He observed it himself at Crystal Lake, Hartstown, September 8, 1925, and at Conneaut Lake the following day. On August 9, 1940, I observed one at Ford Island; one was seen along the lake near Linesville, September 3, 1940; and one was seen in the refuge area on October 13, 1941 (Norman Sickles).

DUCK HAWK

***Falco peregrinus anatum* Bonaparte**

The Duck Hawk is a rather rare and irregular migrant in the Pymatuning region. Sutton (1928) stated that on May 2, 1925 one "was seen to strike and kill a Coot near Hotel Conneaut (on Conneaut Lake), within full view of numerous bystanders". Messrs. Langdon and Bergstrom told him that they were sure that they saw the same individual again on May 29, 1925.

Mr. R. L. Fricke observed one in flight near Linesville on May 24, 1935. Trinible (1940) stated that she observed one at the Pymatuning Refuge, April 24, 1938, and again on August 26, 1939. She was told by Mr. Oudette that one was present throughout the summer of that year. I observed one on the north side of the refuge road, near Linesville, September 24, 1940, and again, off the eastern end of Ford Island, September 27. This very possibly may have been the same bird. I saw another off the eastern end of Ford Island on August 25,

1941. Messrs. Christy and Oudette saw one on the refuge, October 26, 1941. Members of the Pymatuning Group recorded it on May 12, 1946.

On September 10, 1949, Messrs. Robert Calvin and John H. M  hner witnessed the unsuccessful attempt on the part of a Duck Hawk to catch a small sandpiper in the triangle area south of the Linesville spillway. The hawk dived five times, but its intended victim flew so close to the water that each time it was forced to pull out of its dive.

EASTERN PIGEON HAWK

Falco columbarius columbarius
Linnaeus

Sutton (1928) considered the Pigeon Hawk as "a rare but fairly regular migrant, for which we have only a few records. It is apparently commoner in fall than in the spring". He presented records for the species as follows: a male taken by Mr. Welshons at Conneaut Lake, March 31, 1914; one seen at Crystal Lake, Hartstown, April 28, 1922; one seen at Conneaut Lake, September 8, 1925; one seen at Pymatuning Swamp, September 11, 1925; and one seen near Shermansville by Mr. Bergstrom, November 9, 1925. He also cited two Meadville records (*fide* Kirkpatrick) for February 22, 1926 and November 20, 1909.

I have never observed this hawk in the present region. Dr. L. E. Hicks (1933b) stated that he observed a single bird at Hemlock Island in the Pymatuning Swamp on June 11, 1932 and again on August 12 of the same year.

EASTERN SPARROW HAWK

Falco sparverius sparverius
Linnaeus

In the present region, the Sparrow Hawk occurs rather uncommonly as a permanent resident. It is typically a bird of the farming regions where it is frequently seen perched on the poles or wires along the roadsides. According to Sutton (1928) the bird was not particularly common in the region twenty years ago. Apparently its status has changed but little since that time.

Sutton cited a number of winter records for the species. During the winter of 1939-40, I observed a few birds every week between early December and April; the following winter I did not see a single individual between the last of December and the first of April. I saw it a number of times during January 1942 and, on occasions, during the winters of 1945-46 and 1946-47.

It has been recorded quite regularly during the summer months of every year, but the number of individuals seen compared with the territory traversed was always uniformly low.



Photo Penna. Game Comm.

The Ruffed Grouse, Pennsylvania's State Game Bird, inhabits most of the wooded areas.

EASTERN RUFFED GROUSE

***Bonasa umbellus umbellus*
(Linnaeus)**

According to Sutton, the Ruffed Grouse was a fairly common permanent resident, which was most abundant in the drier portions of the Pymatuning Swamp. He found that most of the local grouse were clearly referable to the race *umbellus*; but he further stated that "larger, gray-tailed individuals were sometimes found, particularly in fall and winter". While, in recent years, I have never observed any individuals which were other than average-sized, reddish-brown tailed birds, referable to typical *umbellus*, it is not improbable that birds of the northern, gray-tailed race may have formerly occurred in the present region.

At the present time, the Ruffed Grouse is a fairly common species, inhabiting most of the woodlands in and about the lake and swamp as far to the north as the Jumbo Woods. Undoubtedly the slashings which have been left in the wake of the timber cutters have been most favorable to the grouse since the amount of food and cover has been immeasurably increased.

The Ruffed Grouse apparently begins to nest during the latter part of April. Nests with full sets of eggs have been found until the early part of June. On May 2, 1948 Mr. R. M. Sickles found a nest in the Pymatuning Refuge which already held fourteen eggs. Mr. Arthur Swoger found a nest on McNutt Knoll with fifteen eggs on May 12,

1944. This nest was placed in a pile of slashing in a cut-over hemlock tract, just outside the Pymatuning refuge boundary. On May 13, 1946, Mr. Swoger found a nest in the Jumbo Woods which held fourteen eggs. While most nests of this bird are found on the drier wooded knolls, and are usually partially protected by a stump or fallen tree trunk, Sutton stated that Dr. O. E. Jennings and his party found two nests in a sphagnum bog, near Hartstown, on June 2, 1923. One of the nests was sheltered by leaves of skunk cabbage. According to Sutton the sphagnum-tamarack association was a favorite of the grouse, not only in the nesting season, but also in the winter season. On numerous occasions, during the winter months, I have observed the tracks of these birds deep in the thickets of swamp shrubs bordering the channel of the Shenango River, where they were apparently foraging for food.

Sutton regarded the Red Fox as the principal enemy of the grouse in the Pymatuning region. Of more recent years the Gray Fox has shown a tremendous increase and it may well become an even more serious enemy of the bird. Cooper's Hawks, which are common throughout the region, are likewise conspicuous among the bird's enemies.

EASTERN BOB WHITE

***Colinus virginianus virginianus* (Linnaeus)**

Brown (1885), one of the county's early historians, stated that the Bob White was "not even seen or heard of" in this region prior to the development of agriculture. Sutton (1928) said that it was "an irregularly common permanent resident, which prior to 1905 was considered common". He stated that Mr. Todd recorded it as numerous about Linesville on June 16, 1897, but that it gradually became rarer until in 1919 it was quite scarce, and entirely absent from some sections. During the four or five years prior to the year 1928, he indicated that it had become much more common and he attributed their increase to the restocking activities of the State Game Commission.

Within recent years, the Bob White has certainly not been common anywhere in the region, in spite of the fact that repeated attempts to restock it have been made. Only occasionally was a covey of these birds observed during the winter months. Most of the birds which are stocked in the spring months seem to disappear before late fall. Very few of the remainder ever seem to get through a winter season. I am of the opinion that few, if any, of the native stock still exist, and that the hatchery-reared stock evidently lacks the stamina and recuperative ability the native birds possessed. Most of the birds which have been stocked exhibit absolutely no fear of man. Nor do they have the ability to avoid their natural enemies. It does not seem to be either a question of food or cover, for there are many areas of excellent quail habitat which do not support a covey of the birds.



RING-NECKED PHEASANT

***Phasianus colchicus* Linnaeus**

The country surrounding the Pymatuning constitutes some of the best Ring-necked Pheasant territory to be found in this section of the state. This region, with its swamps and swales, thickets, and cultivated fields, seems to be most suitable as a habitat for this exotic game bird. It is a common permanent resident throughout most of the present region and the most hunted of all the upland game birds.

Sutton, writing in 1928, had the following to say about the Ring-necked Pheasant: "During the last four years approximately 1,400 individuals have been liberated in Crawford County, and a fair proportion of this number were placed in or about the borders of Pymatuning Swamp and near Conneaut Lake. This Asiatic form has adapted itself admirably to conditions in the present region. While it has won for itself the reputation of a carnivore, we find that the reports concerning its killing of young rabbits, Bob-whites, and Ruffed Grouse, and its devouring of eggs, are almost altogether without foundation. It fares well in winter in the present region, and seems to find the thicker portions of the Swamp admirably equipped with food and shelter for its use".

Many pheasants are released annually to augment the number of birds present. It has recently been the practice to release cock birds in the fall, and to hold over the females for release in the spring. Only the cock birds may be legally hunted. Nests with full sets of eggs are found between mid-May and mid-July. The peak of the nesting season is in early June. It is probable that nests found later than mid-June may represent attempts at renesting. On May 27, 1935 Mr. R. L. Fricke found the nest of a Shoveller which contained eight eggs of the Ring-necked Pheasant and eight of the rightful owner. In April 1948 Mr. R. M. Sickles found a nest of a black duck on Ford Island in which a pheasant had laid eggs; but the nest had been destroyed by predators, apparently crows. Mr. H. H. Harrison found a nest with nine eggs on Ford Island on May 20, 1944.

EASTERN WILD TURKEY ***Meleagris gallopavo silvestris* Vieillot**

Sutton gave a detailed account of the Wild Turkey in the Pymatuning Swamp. It was said formerly to have been a locally abundant permanent resident, particularly in the wilder portions of the Swamp, where food and cover conditions were ideal. According to Mr. Ralph

J. Ferris of Linesville, the last flock of Wild Turkeys was seen in 1881 or 1882 when two birds were killed from this flock. They are said to have stayed on Glenn, Whaley, and other islands, but to have come out of the Swamp into the cleared lands to feed. Some have doubted that the original strain of Wild Turkey was present as late as 1870, and claim that the birds then found at Pymatuning had strayed from the surrounding farms. (Sutton, 1928.)

KING RAIL

***Rallus elegans elegans* Audubon**

Sutton considered the King Rail to be "a rare and infrequently recorded migrant" and he stated that it "sometimes occurs locally in the summer and should occasionally nest" although, at that time, there were no breeding records for the species.

The King Rail is never common and usually must be considered as scarce. The earliest date for its arrival in the spring is April 13, 1934 (Trimble, *vide* Dilley). The latest date on which it has been taken in the fall was November 22, 1922, when an individual was caught in a muskrat trap (Sutton). Trimble mentioned that Mr. Oudette found one dead during the month of December, 1937.

Dr. S. S. Dickey observed an adult with two young in a marsh near Hartstown on June 18, 1922. Mr. S. J. Seiple later saw a female with two young at the same locality in August, 1930 (Trimble, 1940). Dr. Hicks (1933) reported having seen an adult with "at least four young" at the Pymatuning on June 16, 1931. The first, and as far as I know, the only actual record of a nest with eggs was obtained by Mr. R. L. Fricke. On May 23, 1925, he discovered a nest containing nine eggs in a marshy area near Linesville.

VIRGINIA RAIL

***Rallus limicola limicola* Vieillot**

The Virginia Rail, according to Sutton, was a "fairly common migrant and locally an abundant summer resident". He recorded its breeding in the marshy areas about the Pymatuning, at the head of Conneaut Lake, in the Conneaut Marsh, and elsewhere. Its status in the present region has evidently not changed materially during the intervening years.

The species arrives shortly after mid-April: April 18, 1925, at Shermansville (Sutton, *vide* Bergstrom); April 19, 1941, near the Linesville spillway (Bauder). On April 23, 1941, I observed several of these birds in the marshy area about the Blair Bridge. By the latter part of April it is generally quite common in all of the regional marshes. The latest date on which I have observed it in the fall was on October 14, 1940, on which occasion Dr. H. S. Peters and I found a lone individual at the south end of the old corduroy road in the Pymatuning

Refuge. Todd (1940) said that C. A. Bergstrom found it at Hartstown on November 1 and 11, 1928, and in 1931 on the very late date of December 15.

Sutton gave data on nine nests which he had found between May 4 and 31 of different years. The average number of eggs was nine to ten. Messrs. Shoemaker and Harrison located a nest near the Linesville spillway on May 21, 1943, which contained eight eggs, and another at the Hartstown marsh on June 1, 1943, which contained a like number. Mr. R. L. Fricke found a nest at Smith Marsh on May 26, 1942, which contained ten eggs.

In 1947, Mr. Harrison found a bird incubating five eggs in Conneaut Marsh on June 15, and another with four eggs in Smith Marsh. On July 7 a nest in Conneaut Marsh was hatching; there were five young and two unhatched eggs.

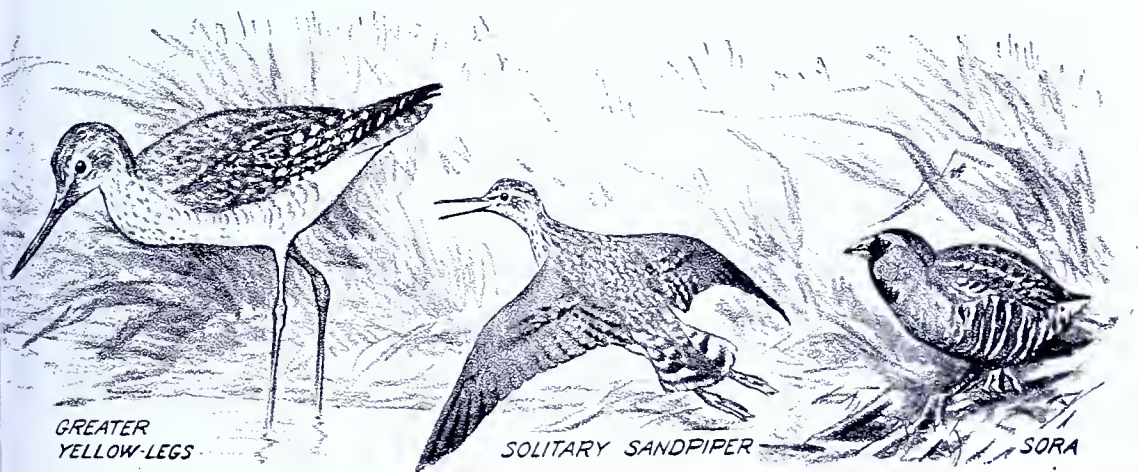
Downy young of this species were often seen during the month of June; but on August 14, 1941, in the marsh at Hartstown, I observed a female with a brood of small downy young. On June 1, 1943, Messrs. Shoemaker and Harrison reported having seen birds with downy young in the Hartstown marsh.

SORA RAIL

Porzana carolina (Linnaeus)

Sutton stated that the Sora Rail was "a common migrant in suitable locations and fairly common summer resident, which is certainly known to have nested in the cattail marshes near Hartstown and Linesville". In recent years it certainly seems to have been nearly, if not quite, as common as the Virginia Rail. It has been found in most of the marsh areas within the present region.

The Sora apparently arrives in the region soon after mid-April; but it is never common before the early part of May. Mr. F. W. Bauder saw one in a small marshy area just south of the Linesville spillway on April 19, 1940. On April 24, 1941 I observed it in the marsh about the Blair Bridge. Peaks of migration are apparently reached during



the early part of May and again during the month of September. The latest date on which it has been recorded in the fall was November 7, 1928, at Shermansville (Todd, *vide* Bergstrom).

This species, like the Virginia Rail, nests in stands of cattail, bur-reed, and other marsh vegetation. The majority of the nesting records are for the month of May; the number of eggs is between ten and twelve. Sutton observed a female with at least fourteen newly hatched young on May 25, 1922; later a nest with numerous broken egg shells was found nearby.

YELLOW RAIL

***Coturnicops noveboracensis noveboracensis*
(Gmelin)**

The only available records for this species in the Pymatuning are those of Messrs. Hicks and McQuiston. Hicks (1933) stated that an adult was seen in the Pymatuning Bog, Ashtabula County, Ohio, on July 2, 1933, and that a half-grown immature bird was found dead in the same vicinity on the state line, August 9, 1932. Mr. H. M. McQuiston observed another specimen about two miles west of Linesville on October 6, 1934 (Trimble, 1940).

BLACK RAIL

***Laterallus jamaicensis pygmaeus* (Blackwall)**

Sutton stated that on September 7, 1925, he observed a Black Rail along the southern shore of Crystal Lake, Hartstown. He watched the bird for several minutes at a range of about six feet but was unable to collect it "because it could not be frightened to a sufficient distance for shooting, and once it was behind the screen of vegetation it was lost to view. . . . The red-brown neck patch was a prominent mark and the bright red eyes were unmistakable". He further stated that Mr. Keesler claimed to have seen several Black Rails near Conneaut Lake at the time of autumn field trails for dogs on September 5, 6, and 7, 1917. The latter does not seem to be a certain record, however, as there is a good possibility that Mr. Keesler may have been mistaken in his identification. I know of no recent records for the species anywhere in the region.

FLORIDA GALLINULE

***Gallinula chloropus cachinnans* Bangs**

Sutton evidently did not consider the Florida Gallinule to be at all common in the old Pymatuning Swamp. He states that "it is not common as a migrant, and apparently is more often seen in fall than in spring". On September 5, 1925, he observed a family group of eight young with their parents on Lower Lake, Hartstown; and on June 30,

1927, he found a nest with seven eggs along the channel of the Shenango River, about four miles north of Hartstown. Those apparently were the first actual indications that the species was breeding in the Pymatuning region.

Within recent years, the Florida Gallinule has been a fairly common breeding species in many of the local marsh areas. It arrives about mid-April or shortly thereafter; but the peak of the spring migration seems to occur between April 25 and May 10. The earliest date on which it has been recorded was April 14, 1944 (Shoemaker). On April 18, 1941 I observed several individuals in the marsh area at Hartstown. During most years, it was regularly recorded during the last week of April but often did not become common until the early part of May. A few migrants undoubtedly augment the local population in the fall, but no indications of an overwhelming increase in numbers was ever noticed. During the fall of 1941 I observed occasional individuals as late as the last week of October, but most of the birds leave before the middle of that month. Sometimes very few were seen after the end of September.

In 1931 Mr. R. L. Fricke found the species to be common in the marsh at Hartstown. It has been more or less common there every year since that time. On May 21, 1933 he collected a set of eight eggs from a semi-floating nest composed of uprooted aquatic plants and lined with a few dry and broken leaves of the cattail. On May 26 of that same year he found another nest, in the same area, which held eleven well-incubated eggs. On May 27, 1936 he collected a set of nine eggs from a nest near Linesville which were about one-third incubated.

On May 21, 1940 Mr. Fricke and I found three nests in the cattail stands at Hartstown which contained seven, eight, and eleven eggs. These were typical nests, built among the cattails in the shallow water, and were composed of a built-up platform of dead cattail leaves with a ramp leading up one side. On May 26, 1942 at Smith Marsh, Mr. Fricke found six nests with the eggs numbering from one to ten. Messrs. Shoemaker and Harrison observed a nest in the Hartstown marsh on June 1, 1943, which held fourteen eggs; and on June 15, 1944, Mr. Harrison found a nest with twelve eggs.

Family groups of downy young are frequently seen during the month of June in most years. On June 12, 1941, I observed a group of eight such young at Smith Marsh; on June 30, I saw another family of seven at the Hartstown area. As late as August 14, 1941 I saw a pair at Hartstown with small downy young; when most of the broods seen were from two-thirds to nearly fully grown. On July 30, 1940 I observed a pair in the refuge with a brood of small downy young, certainly less than a week old. Such late broods of young undoubtedly represent the results of renesting attempts rather than second broods.

AMERICAN COOT

Fulica americana americana Gmelin

According to Sutton the Coot was a common migrant, and it was known to breed occasionally in the Pymatuning region. On May 31, 1923, he observed one with two very small young in a secluded marsh area about three miles north of Hartstown; and he states, on the authority of Mr. Louis Schaffer, that the Coot had nested a number of times at his place near Hartstown. Within the more recent years it has been a common migrant; and, at least for two seasons immediately following the flooding of the present refuge area, it was an unusually common breeding species.

Coots generally arrive during the early part of March, becoming increasingly abundant as the month progresses. Mr. B. L. Oudette recorded its arrival as early as February 19, 1939. In 1940 I saw the first Coots on March 2; the following year I observed them first only one day later. On March 11, 1941 several birds were seen near the Linesville spillway. Generally it was common throughout the month of April, and there are numerous records for the month of May. The fall migration begins during the latter part of August. Mr. Oudette observed a raft of several hundred in the refuge on August 26, 1938, which were most certainly migrants. The peak of the migration is reached in October when rafts numbering thousands of birds were often seen in the area. Usually by mid-November the big flight is over although small groups often lingered until the lake froze over. During the winter of 1941-42 a few birds remained near the Linesville spillway until January 4.

In the Pymatuning refuge the vast beds of cattail, in which both Coots and Gallinules nested so abundantly between 1934 and 1936, had practically disappeared by the spring of 1937; consequently the local breeding population of these birds abruptly declined. Trimble (1937) stated that "in the two years following (the flooding of the area), Coots became so numerous, and their floating nests were so often and so easily found, that they were no longer a novelty". Todd (1940) stated that his party found four nests in the area on May 22, 1934. These contained sets of nine, seven, and three eggs. On May 16, 1935 they found about a dozen nests; some were empty while others had full or incomplete sets of eggs. According to Trimble, a diminution in the numbers of Coots became apparent during 1937. During the summer of 1938 they seem to have been absent from the refuge area entirely (Trimble, 1940). On July 17, 1940, I saw several of them among the spatterdock beds in the refuge and saw one family of six downy young. I could find no positive evidence that they have bred in the area during subsequent years. Hicks (1935) reported that they had also been found breeding on the Ohio portion of the Pymatuning.

On May 21, 1940 Mr. Fricke and I found a nest in the Hartstown marsh which contained nine eggs. Todd (1940) stated that on May 30, 1934, in the Pymatuning Refuge, his party found a nest containing

twelve eggs. On June 25, 1940, I observed an adult at Hartstown accompanied by five young which were about one-third grown; and at the same locality on August 14, 1941, I observed a brood of young which were nearly three-quarters grown.

PIPING PLOVER

***Charadrius melodus* Ord.**

According to Sutton, Mr. Kirkpatrick took a specimen of the Piping Plover along French Creek, about two miles south of Meadville, on September 7, 1908. I know of no records for it in the immediate Pymatuning region, but it may reasonably be expected to occur here on occasions.

SEMIPALMATED PLOVER

***Charadrius hiaticula semipalmatus*
Bonaparte**

Sutton considered the Semipalmated Plover to be a rather rare migrant, which he stated is "apparently, though not certainly, commoner in the spring than in the fall". Within the past decade it has been a regular and tolerably common migrant at Pymatuning Lake, frequently being recorded at Hartstown and elsewhere.

During the spring migration, the Semipalmated Plover is usually recorded between mid-May and the end of the month. The earliest date was May 10, 1942 and the latest was June 2, 1941, for the species at the Pymatuning Refuge. M. B. Skaggs reported it at Hartstown on May 17, 1941.

The fall migration begins soon after mid-July. On July 17, 1941, I observed two individuals on a mud flat south of the Linesville spillway. It was rather regularly observed during the months of August and September, with a few individuals often lingering into the early part of October. On October 12, 1940 a few were still seen on mud flats south of the Linesville spillway, but none were seen later than that date. This plover was never observed in large flocks, but individuals or small groups were often seen on the exposed mud flats and on the floating bog islands. It most often associated with the other small sandpipers.

KILLDEER

***Charadrius vociferus vociferus* Linnaeus**

The status of the Killdeer in the present region has apparently changed but very little during the past two decades; for Sutton considered it to be both abundant as a migrant, and common as a summer resident. Killdeers are almost constantly seen on the mud flats and sand-bars about Pymatuning Lake and are frequently encountered in pastures and in cultivated fields.



Nest of the Black Tern in Hartstown Marsh.

Photo by the author.

Killdeer arrive in the present region during the month of March: March 8, 1925 (Sutton, *vide* Bergstrom); March 10, 1946 (Shoemaker); March 18, 1940 (Grimm). By the first of April it is usually quite common, the height of the migration evidently occurring late in March or early in April. An increase in the number of birds seen is usually apparent in September and October when migrants from the north are passing through the region. On November 9, 1940 I found a number of them still present both in the refuge area and on mud flats at the Ohio end of the Espyville-Andover causeway. At the latter locality, Mr. Shoemaker observed it on November 13, of the same year. On November 17, 1941, I saw a few birds near the Espyville end of the causeway. Sutton stated that Messrs. Langdon and Bergstrom have noted it at different times during the winter months, but I know of no recent winter records for it in the region.

Trimble (1940) gave an unusually early nesting record; a nest with four eggs found near the headquarter's house on Ford Island on April 24, 1938. The majority of the nesting records lie between May 10 and June 20. The normal complement of eggs is four. On May 16, 1938 Mr. R. L. Fricke found a nest near Linesville which contained seven eggs. Often the eggs are laid upon the slag and gravel ballast of railroad tracks. On May 14, 1941, I found one near the Linesville station; on May 24, of the same year, I found another on

cinder ballast near Hartstown. On June 27, 1947 a female was flushed from her nest when a cornfield on Ford Island was being cultivated. The alert operator of the tractor stopped the machine in time to save the three eggs. He carefully moved them a distance of several yards, placing them between the rows which had already been cultivated. Later that afternoon he showed me where he had placed them, and I marked the spot for further observations. The following morning I returned and found that the bird had thoroughly accepted the new location, having placed new gravel about the eggs and laid a fourth one to complete the set. Mr. C. B. Shoemaker found a nest on September 24, 1943 which is a most unusually late record.

AMERICAN GOLDEN PLOVER

Pluvialis dominica dominica
(Miller)

The Golden Plover is a rare and irregular migrant in the present region. Sutton cited two records from the Conneaut Lake area, both of which were confirmed by specimens. A specimen in the collection of Mr. Welshons is said to have been taken near Conneaut Lake on March 17, 1912. On September 16, 1926, Messrs. Welshons and Bergstrom saw two individuals in Conneaut Marsh and secured one which was an immature female. One was seen by Mr. S. J. Seiple, near Linesville, on October 8, 1938 (Trimble). Dr. Sutton, Mr. Shoemaker, and others observed one at the Ohio end of the Espyville-Andover causeway on September 27, 1941, and Mr. Shoemaker records having seen another on September 21, 1945.

BLACK-BELLIED PLOVER

Squatorola squatorola (Linnaeus)

Although Sutton considered the Black-bellied Plover to be "a rare and irregular spring and fall migrant", it has, since 1935, been a regular but not particularly common migrant at the Pymatuning Lake. Fall records are much more numerous than are those for the spring season, and it has generally been somewhat more common during the fall migrations.

Trimble (1940) gave the following spring records: three individuals seen between May 18-20, 1936 (Trimble, et al.); thirteen seen on May 24, 1937 (Fricke); three seen on May 30, 1934 (Fricke); three seen on May 29, 1935 (Fricke); two seen on June 2, 1935 (Fricke). On May 21, 1940, I observed a single individual off the eastern end of Ford Island.

While Sutton stated that the Black-bellied Plover was hardly known in the region during the fall, recent fall records for it are quite numerous. On August 5, 1944, Mr. H. H. Harrison observed it at Hartstown. Dr. L. E. Hicks recorded a flock of twelve birds on August 20-21, 1935. Mr. C. B. Shoemaker recorded it on August 23, 1945; and members of the Pymatuning Group observed it on August 23-24, 1947.

On September 27, 1940, I saw a single individual a short distance south of the Linesville spillway. Mr. Shoemaker and I found another in the same locality on September 24, 1941. During the month of October it has been recorded a number of times. Practically every year individuals or small flocks have been seen about the Pymatuning Lake. On October 9, 1940, I came across four birds feeding on one of the small floating islands in the Refuge area. They paid no attention to my approach by boat and did not take wing until I was within about ten feet of them. On November 1, 1940 I observed one in a small flock of shorebirds at the Ohio end of the causeway; one on November 12, 1945 a short distance south of the Linesville spillway; and two at the latter locality, on November 21, 1945.

RUDDY TURNSTONE *Arenaria interpres morinella* (Linnaeus)

The Ruddy Turnstone is apparently a rather rare and irregular transient in the Pymatuning region. Sutton recorded specimens having been taken at Conneaut Lake on May 16, 1899 and on May 26, 1926 by Messrs. Kirkpatrick and Langdon.

Trimble (1940) gave the following records, apparently all from the Pymatuning Lake region: September 29, 1933 (Dilley); October 9, 1933 (Seiple); May 26, 1934 (Fricke); May 8, 1937 (Skaggs); and May 24, 1937 (Fricke). The last record pertained to a flock of about seventy-five birds.

On May 19, 1940 Mr. C. B. Shoemaker reported it as present at Hartstown. Mr. Fricke observed fifteen birds along the Lower Lake west of the Pymatuning Refuge on May 26, 1941; the following day he succeeded in collecting two females at that locality.

AMERICAN WOODCOCK *Philohela minor* (Gmelin)

In 1928, Sutton said that the Woodcock was "formerly an abundant and fairly regular migrant and common summer resident", but later it was only seen occasionally as a migrant, and was decidedly uncommon as a summer resident.

"When Mr. Todd visited the Crystal Lake region in 1895, he found nesting Woodcocks amazingly abundant. Today only a pair or two remain of all that host. This is due partly to change of the environment, since some of the very region under question has been reclaimed; but it is due also to the overwhelmingly severe shooting of these splendid birds, along with the deadly freezes, which have killed hundreds; and locally to the increase of the natural enemies of the bird" (Sutton, 1928).

Between 1935 and 1940, Woodcocks were seemingly quite common about the margins of the recently-created Pymatuning Lake. I recall that on several spring visits, during that period, we observed numerous

individuals and often listened to the male's flight song. At that time they seemed to be particularly common along the northern shore of the refuge, between Linesville and McNutt Knoll; but by the spring of 1941 I found virtually no birds in that vicinity. Within recent years, the species has never been common, even during the seasons of migration.

Undoubtedly, occasional birds still nest in the vast extent of swamp between the refuge area and Hartstown. On June 8, 1941 I flushed one along the eastern side of the Shenango River channel near the site of the heron rookery. In the Jumbo Woods region, to the north of the Pymatuning Lake, several nests were found during the spring of 1947. On May 14, 1947 Mr. C. W. Dinger showed me a nesting bird in that area. I obtained photographs of both the bird and the nest with four eggs. Mr. H. H. Harrison found a bird incubating four eggs near Linesville on May 20, 1944.

WILSON'S SNIPE

***Capella gallinago delicata* (Ord)**

According to Sutton, the Wilson's Snipe was "a common and fairly regular migrant both in spring and fall, and irregularly and locally common as a summer resident". He stated that it was known to have nested in at least three marshy areas at Pymatuning Swamp, in a little marsh west of Hartstown, at the Meadville Junction pond, and in the Conneaut Marsh. Hicks (1933) stated that "in 1928 a careful census on several successive evenings indicated that no less than fourteen pairs were breeding in the Ohio portion of the Pymatuning Bog, or within three-quarters of a mile of the state line. In 1929 about sixteen pairs bred, in 1930 only six pairs were indicated, in 1931, eleven pairs, and in 1932, eight pairs".

Of recent years it has been a regular and usually a fairly common migrant. It certainly breeds in many of the regional marsh areas, but it has not been common during the breeding season of any year since at least 1940. The decline in the population within the past twenty years is apparently in general agreement with the trend throughout the bird's breeding range, although indications now point to an upward trend in population figures.

In the spring the first Wilson's Snipes reach this region during the latter part of March or early in April. Mr. J. G. Crumb recorded it near Pennline on March 18, 1945 and March 26, 1943. Sutton stated that Mr. C. A. Bergstrom observed one at Shermansville on March 8, 1925, which he believed may possibly have been an individual which wintered in the immediate region. Other spring arrival dates given by Sutton range between April 5 and 10; but often, during recent years, it has not been seen before mid-April. In 1947 the first birds were seen on April 10. On April 19, 1947 the courtship flight of several birds was witnessed in a small swale area along the road between

Linesville and Espyville. On April 21, 1941 I observed three or four in courtship flight in the vicinity of Blair Bridge. Sutton (1923) has given a detailed account of the courtship and nesting of the Wilson's Snipe based upon his observations in the Hartstown area.

The fall migration apparently gets under way rather early in August, but some of the small groups seen in the late summer may well be local birds. H. H. Harrison reported having seen a small flock at the Hartstown marsh on August 5, 1944. I saw five birds together in a bay south of the Linesville spillway on July 14, 1941. Records for the species during the month of September and early October are rather numerous. They frequently associated with Dowitchers and other sandpipers on the mud flats around Pymatuning Lake and the marshes. On September 24, 1940, I counted six at a marshy pool a short distance south of the Linesville spillway, where they were seen daily until October 17.

The species undoubtedly nested much more commonly in former years than it does at the present time. Sutton gave records for nests with eggs between May 1 (1925) and May 17 (1923); and nests with young on May 17, 1922 and May 29, 1923.

HUDSONIAN CURLEW *Numenius phaeopus hudsonicus* Latham

The Hudsonian Curlew is a rather rare and erratic transient. Sutton's only record for the species was that of a male bird collected by Mr. Welshons at Conneaut Lake on April 17, 1912. Todd (1940) stated that Mr. G. M. Cook saw a flock of thirteen in flight over the Pymatuning Lake, north of Andover, on May 13, 1937. The following day Mr. R. L. Fricke counted twenty-five in a flock which he saw in flight over the lake just west of Linesville. The birds, according to Mr. Fricke, were calling vociferously.

On September 19, 1940 Mr. B. L. Oudette told me that he had just seen a Curlew near the Linesville spillway. On September 24, and again on September 30, 1940, I observed an individual but a short distance south of the spillway. It is quite possible that both Mr. Oudette's observation and mine all pertain to a single individual. Another bird was seen in the same locality on May 25, 1941.

UPLAND PLOVER *Bartramia longicauda* (Beckstein)

Sutton considered the Upland Plover to be a rather rare transient and a rare and local summer resident which was known to have nested at only four points in the immediate vicinity of Pymatuning Swamp. It now seems to be a fairly common, but local summer resident, occurring only where there are fairly wide expanses of open fields. Such habitat requirements are met throughout Ashtabula County, Ohio, immediately to the west of Pymatuning Lake, and extending northward



BLUE-WINGED TEAL

GREEN-WINGED TEAL
SHOVELLER

HOODED MERGANSER

PINTAIL
MALE DURING AUTUMN MOLT

PINTAIL
MALE SHOWING RUST STAINS

PINTAIL
ADULT MALE

PINTAIL
JUVENILE MALE

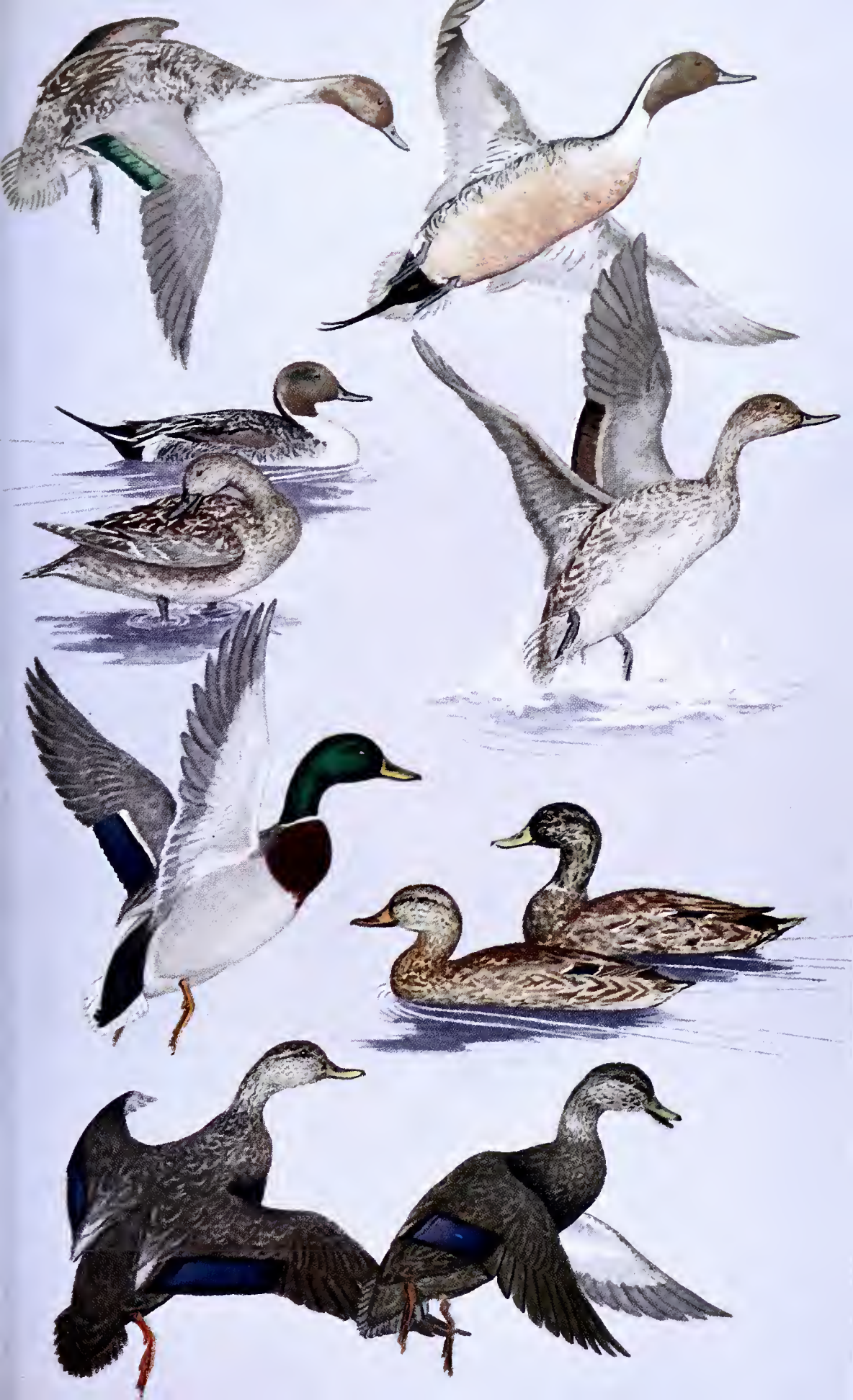
PINTAIL
FEMALE

COMMON MALLARD
ADULT MALE

COMMON MALLARD
MALE IN ECLIPSE PLUMAGE
COMMON MALLARD
FEMALE

BLACK DUCK
ADULT MALE

BLACK DUCK
JUVENILE



LESSER SCAUP DUCK
ADULT MALE

GREATER SCAUP DUCK
ADULT MALE

LESSER SCAUP DUCK
MALE DURING AUTUMN MOLT

LESSER SCAUP DUCK
JUVENILE MALE

LESSER SCAUP DUCK
FEMALE

BUFFLE-HEAD
FEMALE

BUFFLE-HEAD
JUVENILE MALE

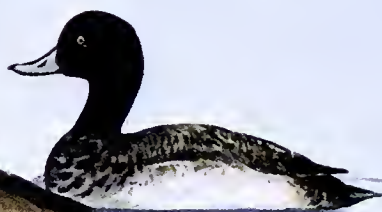
BUFFLE-HEAD
ADULT MALE

BARROW'S GOLDEN-EYE
ADULT MALE

AMERICAN GOLDEN-EYE
ADULT MALE

AMERICAN GOLDEN-EYE
JUVENILE MALE

AMERICAN GOLDEN-EYE
FEMALE



RING-NECKED DUCK
JUVENILE MALE

RING-NECKED DUCK
MALE DURING AUTUMN MOLT

RING-NECKED DUCK
FEMALE RING-NECKED DUCK
ADULT MALE

CANVAS-BACK
MALE DURING AUTUMN MOLT

CANVAS-BACK
JUVENILE MALE

CANVAS-BACK
ADULT MALE

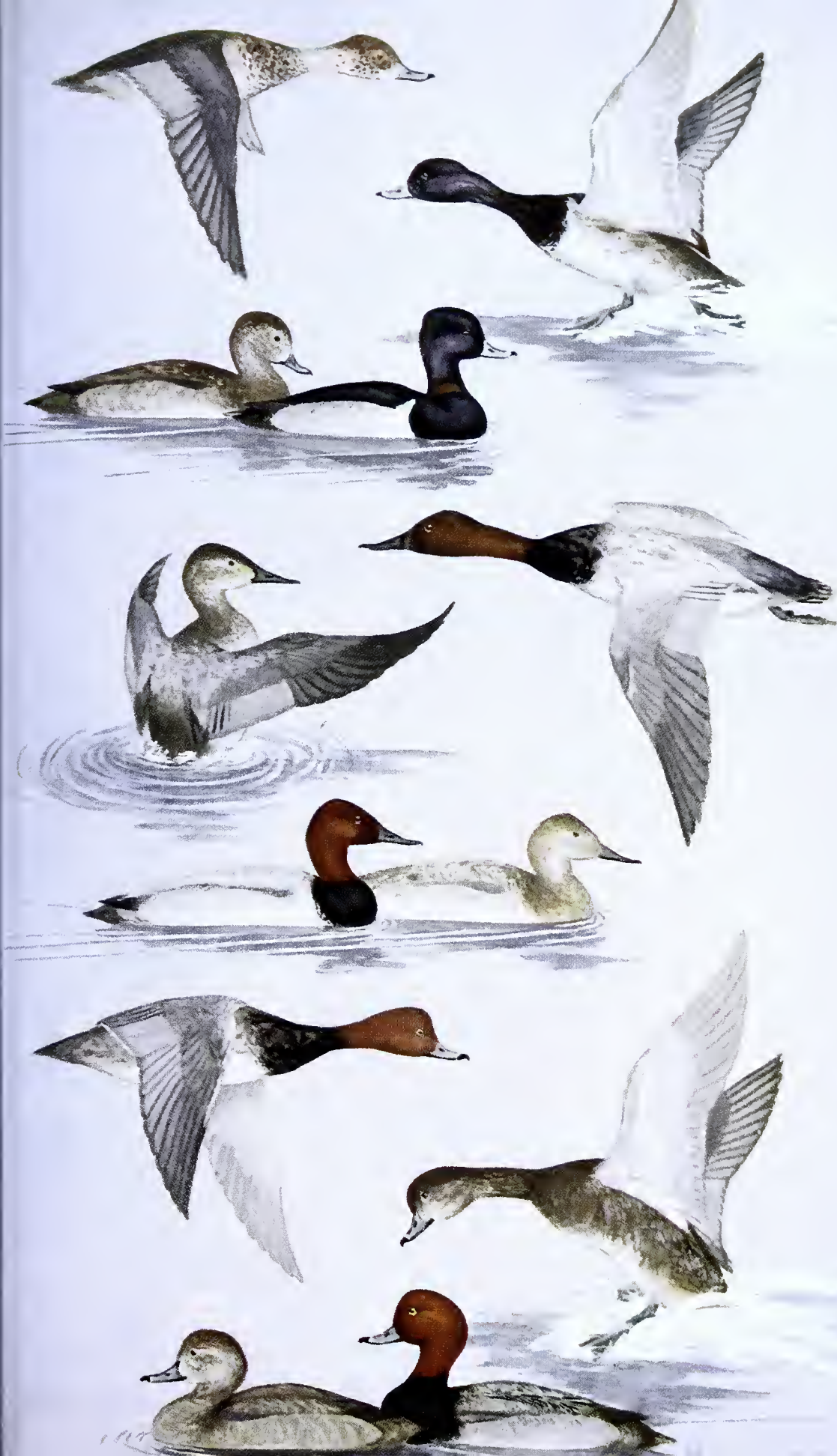
CANVAS-BACK
FEMALE

REDHEAD
MALE DURING AUTUMN MOLT

REDHEAD
JUVENILE MALE

REDHEAD
FEMALE

REDHEAD
ADULT MALE



WOOD DUCK
MALE IN ECLIPSE PLUMAGE

WOOD DUCK
FEMALE

WOOD DUCK
JUVENILE MALE

WOOD DUCK
ADULT MALE

BALDPATE
FEMALE

BALDPATE
ADULT MALE

BALDPATE
MALE DURING AUTUMN MOLT

EUROPEAN WIDGEON
ADULT MALE

GADWALL
FEMALE

GADWALL
MALE DURING AUTUMN MOLT

GADWALL
ADULT MALE



GREAT BLUE HERON

GREEN HERON

AMERICAN EGRET

VIRGINIA RAIL

PECTORAL SANDPIPER

SEMIPALMATED SANDPIPER



PILEATED WOODPECKER

EVENING GROSBEAK

BLACK-CAPPED CHICKADEE

CARDINAL

REDPOLL

PRAIRIE HORNED LARK

RUFFED GROUSE



HOODED WARBLER

BLACKBURNIAN WARBLER

CHESTNUT-SIDED WARBLER

CRESTED FLYCATCHER

TOWHEE

BELTED KINGFISHER

RED-WINGED BLACKBIRD



TO A WATERFOWL

By WILLIAM CULLEN BRYANT

Whither, midst falling dew,
While glow the heavens with the last steps of day,
Far through their rosy depths dost thou pursue
Thy solitary way?

Vainly the fowler's eye
Might mark thy distant flight, to do thee wrong,
As, darkly painted on the crimson sky,
Thy figure floats along.

Seek'st thou the plashy brink
Of weedy lake, or marge of river wide,
Or where the rocking billows rise and sink
On the chafed ocean-side?

There is a Power whose care
Teaches thy way along that pathless cost—
The desert and illimitable air—
Lone wandering, but not lost.

All day thy wings have fanned,
At that far height, the cold, thin atmosphere;
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

And soon that toil shall end;
Soon shalt thou find a summer home, and rest,
And scream among thy fellows; reeds shall bend
Soon o'er thy sheltered nest.

Thou'rt gone; the abyss of Heaven
Hath swallowed up thy form; yet on my heart
Deeply hath sunk the lesson thou has given,
And shall not soon depart.

He, who from zone to zone
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone,
Will lead my steps aright.

across the state line into the vicinity of Pennline, Pennsylvania. Another area extends along the eastern shore of the lake from Jamestown to the bend north of Espyville, in the vicinity of the old Polleck Bridge.

In the spring the Upland Plover arrives fairly early in April: April 9 (Dilley); April 12 (Sutton, *vide* Wade). On April 23, 1946, I observed it in Ashtabula County, Ohio, not far from the Pymatuning Lake.

SPOTTED SANDPIPER

***Actitis macularia* (Linnaeus)**

The Spotted Sandpiper is a common summer resident, arriving in the region during the latter part of April. On April 22, 1941, I saw two along the shore of the lake near Espyville. Trimble (1940) gave spring dates of April 23 (Dilley), and April 26 (Skaggs). Usually by the first of May it has been present in fair numbers. Sutton considered it to be an abundant transient; but he says that it was "only a locally common summer resident, being most common at Conneaut Lake". In recent years it has been commonly seen about the Pymatuning Lake. The summer population of this species is probably much larger today than it was two decades or more ago.

Sutton gave nesting dates ranging between April 20 (1898) and June 5 (1897), most of which pertained to the Meadville region. Practically all of the recent nesting records pertain to the months of May and June. Most of the nests which I have seen have been in grassy areas, both in fields and in small areas of grasses along railroad rights-of-way and roadsides. On the afternoon of June 22, 1944, I observed the hatching of the four eggs in a nest located at the top of a grassy bank, just behind the service buildings on Ford Island. The first egg was pipped at 2 P.M. and by 4 P.M. the last of the four chicks had emerged. Mr. Swoger saw four downy young on June 8, 1944.

In the fall Spotted Sandpipers are always numerous during the month of August and that month undoubtedly marks the height of the autumnal migration. Very few birds are ordinarily seen after the first week of September although occasional stragglers have been seen late in September and even in early October. Messrs. Sutton and Shoemaker recorded one at the Ohio end of the Espyville-Andover causeway on September 27, 1941. Sutton stated that Mr. Kirkpatrick had a record for the Meadville region as late as October 16, during the year 1909.

SOLITARY SANDPIPER

***Tringa solitaria solitaria* Wilson**

The Solitary Sandpiper is a common and regular migrant which is occasionally seen in the present region throughout the summer, although it apparently does not breed here. It often associates with the Greater and Lesser Yellowlegs during both the spring and fall migrations.

First arrivals reach this region about the last week of April or the first week of May: April 25, 1896, and April 28, 1900, near Meadville (Sutton, *vide* Kirkpatrick); May 4, 1941 (Grimm); May 7, 1940 (Fricke). Mr. Shoemaker recorded it on June 1, 1943. I observed two birds in the Pymatuning Refuge area on July 16, 1940, and another on July 9, 1941. I believe that they were either non-breeding individuals or quite possibly early migrants en route south. August records are rather numerous, and apparently the height of the fall migration takes place during that month. Most of the birds pass through this region by mid-September. Mr. Shoemaker found it as late as September 24, 1943; and Mr. Fricke saw one in the refuge area near Linesville on October 7, 1941.

Sutton states that he observed two birds from May 8 to 19, 1922, which he was certain to be a mated pair. He observed one, apparently the female, to enter the deserted nest of a Hairy Woodpecker; but he found no signs of either eggs or young.

WESTERN WILLET

***Catoptrophorus semipalmatus inornatus*
Brewster**

The Willet is a very rare straggler in the Pymatuning region. Sutton said that a male in full plumage was taken by Mr. Welshons, at Conneaut Lake, on May 12, 1911. Todd (1940) mentions two as having

A good stand of wild duck millet.

Photo by the author.



been collected by Mr. W. D. Hunter on the edge of the Pymatuning Swamp, south of Linesville, during the early part of April, 1929. As far as I am aware, there are no more recent records for it.

GREATER YELLOW-LEGS

***Totanus melanoleucus* (Gmelin)**

In recent years the Greater Yellow-legs has been a common transient in this region. Sutton considered it to be "a fairly common migrant both in spring and fall". He states that it was less common than the Lesser Yellow-legs, but of recent years I believe both species have been present in about equal numbers. During the seasons of migration both species regularly frequented the shallow water and mud flats about the lakes. They were often observed in the more open marsh areas.

In the spring the first Greater Yellow-legs were usually seen between April 11 and 20, and they were often common by the end of that month. Sutton states that Mr. Kirkpatrick once observed it near Meadville as early as March 28 (1901). Todd (1940) had seen it near Linesville on April 6, 1937; and Mr. Shoemaker recorded it on April 6, 1946. It was usually present in some numbers during the early part of May and occasional stragglers have been seen until early in June. Sutton said that Mr. Langdon saw a solitary individual near the outlet of Conneaut Lake on May 29, 1925, and another at a little pond north of Geneva in Conneaut Marsh, June 2, 1925.

Almost every year a few individuals, and sometimes small flocks, have been seen during the month of July. On July 3, 1941, I saw one along the lake shore a short distance south of the Linesville spillway. Several were observed in the vicinity of the old corduroy road, in the Pymatuning Refuge, on July 17, 1940, and again on July 14, 1946. Between mid-August and mid-October it is usually present in some numbers. On August 30, 1940, both species of Yellow-legs were abundant in the refuge area. They were present on all of the floating islands as well as in the shallower shoreward marshes. Occasional individuals have been seen late in October or early in the month of November. On November 12, 1940, Mr. Shoemaker observed one just south of the Linesville spillway.

LESSER YELLOW-LEGS

***Totanus flaviceps* (Gmelin)**

Like the Greater Yellow-legs, the present species seems to have always been common as a transient in the Pymatuning region. It arrives in the region about the same time as the larger species, usually between mid-April and the latter part of the month. Messrs. Thorp and Harrison have both recorded it on April 6, 1941; and on April 15, of the same year, I observed several birds in the marsh at Hartstown. It has generally been common during the latter part of April and early part of May.

Like the preceding species, the Lesser Yellow-legs has often been observed here during the month of July. On July 3, 1941, I observed several birds in a bay a short distance south of the Linesville spillway. Other small flocks were seen in the old corduroy section of the Pymatuning Refuge on July 17, 1940, and July 14, 1946. It was generally present in fair numbers during both August and September, but the majority of the birds move south early in October. The latest date on which I have ever seen it was October 22, 1940, when a lone individual was observed just south of the Linesville spillway.

KNOT

***Calidris canutus rufus* (Matthews)**

According to Sutton, Mr. Kirkpatrick took a Knot at Conneaut Marsh on October 11, 1906, and Mr. Welshons secured a male on November 22 and a female on November 28, 1912, at Conneaut Lake. There seem to be no other records for it in the present region.

PECTORAL SANDPIPER

***Erolia melanotos* (Vieillot)**

The Pectoral Sandpiper is a regular migrant, usually quite common, although during some of the spring migrations it was rather scarce, probably due to local conditions, such as the amount of exposed mud flat about the Pymatuning Lake.

Todd (1940) states that he observed it near Linesville on April 6, 1937. Mr. Shoemaker recorded it on April 6, 1946. On April 15, 1941, I estimated that at least fifty birds were seen in the marsh area at Hartstown. Flocks of from ten to thirty were frequently seen during the latter part of April and the early part of May. Trimble (1940) observed it on May 20, 1937. Sutton states that Mr. Langdon secured specimens south of Conneaut Lake on May 28, May 29, and June 18, 1926.

There are several July records for it at Pymatuning Lake. On July 7, 1941, I saw one in a small, shallow bay south of the Linesville spillway; and on July 16 three were present in the same locality. Trimble states that Mr. Skaggs observed it on July 30, 1937. From the latter part of August until about the middle of October they are usually rather common, and often seen in mixed flocks of shorebirds on the mud flats about Pymatuning Lake. I observed a group of eight south of the Linesville spillway as late as November 9, 1940.

WHITE-RUMPED SANDPIPER

***Erolia fuscicollis* (Vieillot)**

The White-rumped Sandpiper appears to be a rather rare migrant. Sutton states that Mr. Langdon took two females and a male on May 26, and another male on May 30, 1926, from a fair-sized flock which was present at a puddle in a field a few miles south of Conneaut Lake. Mr. R. L. Fricke collected one near Linesville on May 8, 1929.

On May 28, 1940, I saw one on Ford Island. Several were seen by Messrs. Sutton, Shoemaker, and others, at the Ohio end of the Espyville-Andover causeway on September 27, 1941. It was recorded by members of the Pymatuning Group on September 30, 1945. On October 10, 1946, I saw three on a mud flat south of the Linesville spillway.

BAIRD'S SANDPIPER

***Erolia bairdii* (Coues)**

Baird's Sandpiper is apparently a rare migrant. On September 13, 1940, Mr. B. L. Oudette collected a specimen, which I had the opportunity of seeing. Messrs. Sutton, Shoemaker, and others observed several individuals in a mixed flock of shorebirds at the Ohio end of the Espyville-Andover causeway on September 27, 1941. It was again observed by members of the Pymatuning Group on September 30, 1945. On their field trip of September 11-12, 1948, a total of four individuals was seen, according to Mr. Shoemaker.

On August 20, 1949 Mr. John F. Mehner and his party observed one in the triangle area south of the Linesville spillway. The next day they saw another at the Andover end of the causeway. Two were seen in the latter area on September 4, 1949 by Messrs. Mehner and Calvin.

LEAST SANDPIPER

***Erolia minutilla* (Vieillot)**

Sutton regarded the Least Sandpiper as "a rather rare and irregular migrant, which occurs only along the muddy pools near the roads and in the open fields, and practically never at any of the larger lakes of the region". Its absence from the natural lakes of the region is apparent for they present practically no mud flat; but its scarcity about some of the regional marsh areas, where we have frequently observed it, is surprising. It has, within recent years, been a regular and usually common migrant; but its numbers, like most other shorebirds, depends largely upon the extent of mud flat exposed at the migration season.

Usually this little sandpiper arrives about the second week of May. On May 8, 1941, Mr. Fricke and I observed several in the marsh area at Hartstown. He collected one individual. Sutton states that he collected a male at a tiny puddle near Hartstown on May 13, 1922. On May 21, 1940, Mr. Fricke and I observed a number on the floating islands in the refuge area. Two individuals of this group were secured for the Pymatuning Museum. Most of the birds pass on to the north by the end of May. Sutton says that the Mr. Langdon recorded it at Conneaut Marsh on June 2, 1925; and that he had observed individuals during June and July, 1926.

July records undoubtedly mostly pertain to early migrants en route south. On July 3, 1941, I observed several birds on mud flats south of the Linesville spillway. On the following July 11, I saw about fifty in that locality and a large number at the Ohio end of the Espyville-Andover causeway. Usually it has been quite common during the

months of August and September. I have observed it as late as October 4 during 1940; and Trimble (1940) states that Messrs. Seiple and Dilley recorded it on October 14, 1933.

RED-BACKED SANDPIPER

***Erolia alpina pacifica* (Coues)**

The Red-backed Sandpiper, which Sutton considered as usually rather rare and irregular, has of recent years been both regular and fairly common as a migrant, particularly when extensive areas of mud flat are exposed about Pymatuning Lake.

In the spring the Red-backs are usually first seen about mid-May, and some occasionally linger until near the last of that month. Trimble (1940) says that Mr. M. B. Skaggs observed it on May 8, 1937. Sutton found it in Conneaut Marsh, near Geneva, on May 15, 1925. Mr. Fricke recorded it from the Linesville area on May 15, 1934. R. M. Sickles saw it at the Pymatuning Refuge on May 15, 1940. On May 15, 1941, I saw eight birds feeding with some Dowitchers at the Ohio end of the Espyville-Andover causeway. There are a number of records for the latter half of May in various years. On May 26, 1941, I observed several about a small pool north of the Linesville spillway.

In the fall it does not seem to have been observed earlier than the first week of October. On October 2, 1941, I saw a few individuals feeding with other shore birds at the Ohio end of the Espyville-Andover causeway. It was often commoner during the fall migrations than it was in the spring, but this may be due to the fact that usually more mud flat was exposed in the fall. Mr. Shoemaker and I observed at least fifty at the Ohio end of the causeway on October 19, 1940; and on October 25, 1941, I counted sixty-one at that locality. Many of the birds linger about until about mid-November. I observed the last ones on November 18 both in 1940 and 1941.

EASTERN DOWITCHER

***Limnodromus griseus griseus* (Gmelin)**

Sutton had no records for the Dowitcher in the Pymatuning region prior to 1928, but he indicated that it should occasionally occur as a rare migrant. Fricke (1930) was the first person to record its occurrence here. On May 20, 1930, he observed three individuals about a mile south of Linesville. He collected one female. At Hartstown, Mr. S. J. Seiple observed three on May 17, 1930; one on May 12, 1942; and one on August 1, 1930 (Trimble, 1940).

Since that time it appears to have become a fairly regular migrant; and it has not been at all uncommon, particularly during the fall migrations. Mr. Fricke saw from one to a dozen individuals during the month of May in the years between 1933 and 1936. On May 19, 1940, it was reported by Messrs. Thorp and Hegner. I observed one south of the Linesville spillway on September 5, 1940; three on October 4; and two on October 12.



Photo by the author.

A part of the lake as seen from Ford Island in winter. Most of the floating islands have sunken.

On May 15, 1941, five were seen in the company of some Red-backed Sandpipers at the Ohio end of the Espyville-Andover causeway. Between July 3 and August 6, 1941, I regularly observed from one to three individuals on mud flats just south of the Linesville spillway. A male which was still in the reddish spring plumage was collected on July 3. On August 25, six were present at the latter locality, all of which were in the grayish winter plumage. Skaggs (1942) records his observation of two individuals on August 10, 1941. In 1942, I again observed several birds about the lake between September 2 and 8. Mr. Shoemaker recorded it on September 24, 1943. During the months of September and October it seems to have been present with fair regularity. On November 12, 1945, I counted seven on the muddy shore of the lake south of the Linesville spillway.

On August 16, 1949 Messrs. John F. Mehner and James Ross observed 20 birds on the mud flats south of the Linesville spillway. They were able to approach within fifteen feet of the birds without flushing them.

STILT SANDPIPER

***Micropalama himantopus* (Bonaparte)**

Sutton had no records for the Stilt Sandpiper in the present region, but he added that "it doubtless occurs irregularly at least in the fall". Todd (1940) and Trimble (1940) make no mention of its occurrence in the Pymatuning Region.

Skaggs (1942) tells of his observing two individuals along the lake near Linesville on September 23, 1938. On September 24, 1940, I saw one at the Ohio end of the Espyville-Andover causeway; and on the

following October 5 Messrs. Shoemaker and Harrison and I saw another in a group of shorebirds on mud flats south of the Linesville spillway. On July 12, 1941, I observed five individuals at the latter locality, all of which were wearing the spring plumage. On July 14, I collected a female specimen which is now in the Pymatuning Museum. At this locality I saw three birds on July 17, and five on July 21. On August 6, 1941, I observed two individuals which were then in the grayish fall plumage. Skaggs (1942) observed four in this general vicinity on August 10, 1941.

SEMIPALMATED SANDPIPER ***Ereunetes pusillus* (Linnaeus)**

Sutton stated that the Semipalmated Sandpiper was "a migrant of occasional occurrence, apparently much commoner in the fall than in the spring". In more recent years it has certainly been a regular, and usually a fairly common transient, both in the spring and fall seasons. It has frequently been observed at many of the regional marsh areas as well as about the Pymatuning Lake.

In the spring it does not usually arrive before mid-May: May 17, 1941 (Skaggs); May 18, 1936 (Trimble). On May 21, 1940, Mr. Fricke and I observed fairly large numbers on the floating islands in the Pymatuning Refuge area. Two individuals were taken for the Pymatuning Museum collection. During the spring of 1942 occasional individuals were seen as late as June 4.

As with many other shorebirds, the fall migration begins early, and individuals have frequently been seen in July. Todd (1940) gave records for the Linesville area of July 9, 1938, and July 30, 1937. On July 12, 1941, I observed one in a small group of Least Sandpipers which were feeding on a mud flat south of the Linesville spillway. On July 21, 1941, I estimated there were at least twenty at that locality. The majority of the birds seem to pass through this region between mid-August and the latter part of September, their numbers usually decreasing sharply in early October. On October 20, 1941, I observed a lone bird near the Linesville spillway. Trimble (1940) records having seen it as late as October 23, 1946.

WESTERN SANDPIPER ***Ereunetes mauri* Cabanis**

No specimens of the Western Sandpiper have as yet been taken in the Pymatuning region and I know of no valid sight records. It may reasonably be expected to occur, at least occasionally, among the flocks of Least and Semipalmated Sandpipers.

BUFF-BREASTED SANDPIPER ***Tryngites subruficollis* (Vieillot)**

The Buff-breasted Sandpiper is evidently a very rare and erratic migrant or wanderer for which there is but one positive record for the present region. On September 7, 1940, Mr. B. L. Oudette collected an adult male near Linesville. It is now in the collection at the Pymatuning Museum.

MARbled GODWIT

Limosa fedoa (Linnaeus)

This species is a very rare straggler for which there are but two records in the present region. Sutton states that one was taken by William G. Sargent in Conneaut Marsh during a spring in the late '70's. Todd (1940) records two individuals that were taken by Mr. W. D. Hunter, on the south side of Pymatuning Swamp, southwest of Linesville, on October 2, 1929.

SANDERLING

Crocethia alba (Pallas)

Sutton had but one certain record for the Sanderling at Conneaut Lake; an adult male and an adult female which were taken by Mr. Welshons on November 1, 1909. It has been recorded at Pymatuning Lake several times since 1940; but it is apparently uncommon and irregular as a migrant, occurring, as far as now known, only during the fall migrations.

On September 5, 1940, I saw three individuals on a mud flat south of the Linesville spillway. Two of them, a male and a female, were collected by Mr. Oudette for the Pymatuning Museum collection. On October 16, 1940, I saw seven at the Ohio end of the Espyville-Andover causeway; and on November 1 one was seen at the same locality. Messrs. Sutton, Shoemaker, and others observed it at the same locality on September 27, 1941. Mr. Shoemaker again recorded it on September 24, 1943. Members of the Pymatuning Group recorded it on September 30, 1945.

Messrs. Robert Calvin and John F. Mehner observed a flock of eight birds on a mud flat south of the Linesville spillway on September 10, 1949.

AVOCET

Recurvirostra americana Gmelin

Sutton states that Mr. Welshons took an adult on May 16, 1905, at the head of Conneaut Lake. That is the only known record for the species in the present region.

RED PHALAROPE

Phalaropus fulicarius (Linnaeus)

Trimble (1940) records the taking of a female of this species by Dr. L. E. Hicks on the Ohio side of Pymatuning Lake, two miles north of the Espyville-Andover causeway, on July 16, 1937. The bird is said to have been in the breeding plumage.

WILSON'S PHALAROPE

Steganopus tricolor (Vieillot)

The sole authentic record for this species in the present region is that of a female which was collected near Linesville on May 15, 1934, by Mr. R. L. Fricke.

NORTHERN PHALAROPE

***Lobipes lobatus* (Linnaeus)**

Sutton gave three records for the Northern Phalarope at Conneaut Lake: an adult male taken by Messrs. Langdon and Bergstrom on August 29, 1926; a male taken by Mr. Welshons on September 7, 1911; and an individual taken by Mr. Kirkpatrick on September 24, 1909. Mr. Harold D. Mitchell (1940) has recorded an individual which was observed by himself, and other members of the Pymatuning Group, near the Linesville spillway on October 7, 1939.

GREAT BLACK-BACKED GULL

***Larus marianus* Linnaeus**

Sutton said that Mr. Welshons was apparently the only observer who had actually recorded this species. "During the late winter and early spring in 1904 he repeatedly saw several Black-backed Gulls on the ice in the middle of Conneaut Lake. He states that, even at a distance, they appeared much larger than the numerous Herring Gulls. On November 4, 1926, he noted it again at Conneaut Lake".

The Great Black-backed Gull has been recorded a number of times at Erie where I observed several on February 18, 1947. It has not, to the best of my knowledge, as yet been observed at Pymatuning Lake; but it may be expected to occur occasionally during the winter months.

AMERICAN HERRING GULL

***Larus argentatus smithsonianus*
Coues**

According to Sutton, the Herring Gull was only an irregular migrant at the old Pymatuning Swamp, but it was regular and abundant at Conneaut Lake, "often appearing so early in spring and remaining so late in fall that it may fairly be regarded as a winter resident". Since the creation of the Pymatuning Lake it has been a very common transient and an occasional winter resident in that area, as well as at Conneaut Lake.

Each spring, about the time the ice was going off the lake, and again before the water froze over in the fall, this gull was quite abundant. It has been recorded on occasions throughout the winter season. Trimble (1940) gave records for it during the month of January, 1934 (*fide* Dilley), and on January 12, 1934 (*fide* Seiple). I observed several individuals on January 3, 1941, and, on January 22, 1941, I saw three along the Espyville-Andover causeway. Between one and three individuals were observed a number of times during the month of February, 1941. Peak numbers were usually recorded during late March and early April. Thereafter it became much less numerous although stragglers were frequently seen during the month of May, and occasional individuals have been noted throughout the summer months. Trimble (1940) gave the following summer records: June 6, 1936 (Trimble); July 2-4, 1936 (Todd); and July 9, 1938 (Seiple). On July 28, 1941, I saw an immature bird in the company of some

Ring-billed Gulls at the Ohio end of the Espyville-Andover causeway. It was usually seen with increasing frequency during the month of August. It generally became quite common about mid-September, and numbers of them were regularly seen from then on until the lake completely froze over. I observed a few still about the lake on December 23, 1941.

RING-BILLED GULL

***Larus delawarensis* Ord**

The Ring-billed Gull, considered by Sutton as "a fairly regular migrant", has always been a common transient in recent years. Every summer a number of non-breeding birds linger about the lake. This is the species of gull which visitors to the lake often see about the Linesville spillway during the summer season. They often alight on the water to eat some of the bread which persons throw to the multitude of carp which congregate in the bowl between the Upper and the Lower Lakes.

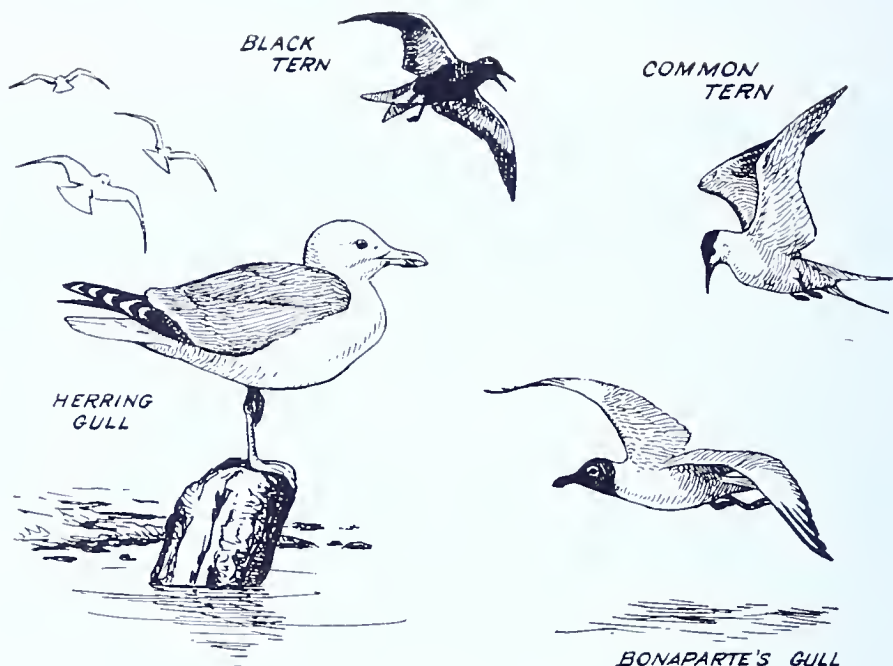
In the spring, the first gulls of this species are usually seen during the latter part of March or the early part of April. I observed three individuals off the Espyville-Andover causeway on March 8, 1940. This is the earliest date on which I have ever seen them. On March 24, 1941, I observed two individuals at the same locality. Usually they are present in some numbers by the end of April or the first week in May, thereafter diminishing in numbers until about mid-August. This gull does not remain in any numbers after mid-October although a few are regularly seen even throughout the month of November. The latest date on which I have ever seen it in the fall was on December 2, 1941.

BONAPARTE'S GULL

***Larus philadelphia* (Ord)**

Sutton stated that the Bonaparte's Gull was "a regular and sometimes abundant transient visitant, occurring not only at Conneaut Lake, but at Crystal and Lower Lakes in Pymatuning". In recent years it has always been a regular transient, often being very common in the spring but only tolerably common during most of the falls.

In the spring, the first Bonaparte's Gulls were sometimes seen early in April; but they were seldom common until after the middle of that month. Sutton said that Mr. Welshons recorded it at Conneaut Lake on March 25, 1913, which is a very early date. I observed a few on April 2, 1941, and Todd recorded it on April 8, 1937. The peak of the spring migration usually occurred between April 20 and May 15. As a rule the earliest arrivals were black-headed adult birds while those seen during the latter part of the migration were virtually all immature. On April 13, 1947, and again on April 20, we saw numbers of fully adult birds about the lake, one flock of thirty or more being seen off the Espyville-Andover causeway on the latter date. Most of the individuals



which I have seen in May were in the immature plumage. Trimble (1940) says that they saw a flock of about two hundred near Linesville on May 17, 1937, all of which seemed to be young birds.

Individuals, invariably in the immature plumage, have occasionally been seen in the summer season. Sutton says that Mr. Langdon saw it at Conneaut Lake on June 6, 1925. On July 4, 1947, we observed one on the Lower Lake between Jamestown and Westford. It was perched on a piece of driftwood and flew upon our approach, but it circled and returned to its perch after our boat had passed. I observed another off the eastern end of Ford Island on July 12, 1940. Sutton states that Mr. Langdon noted several during June and July, 1926, as late as July 17.

The fall migration begins during the latter part of August and continues until about mid-November, but our fall records are meager compared to those for the spring. Sutton stated that Mr. C. J. Seiple observed a flock of immature birds at Conneaut Lake on August 24, 1925, and a flock of adults on August 30. The majority of recent fall records are for the months of September and October. Trimble (1940) tells of seeing a number at the Jamestown dam on October 28, 1939. I saw a lone individual along the north shore of the Upper Lake, near Linesville, as late as November 18, 1940.

CASPIAN TERN

Hydroprogne caspia (Pallas)

Sutton considered the Caspian Tern as "a rare, but perhaps regular migrant". He presented but one record for it; an individual which was taken by Mr. Langdon at Conneaut Lake on May 5, 1925. While it has never been particularly common at Pymatuning Lake, it seems to be a fairly regular spring transient and occasional in the fall.

The first terns of this species were usually seen between the middle of April and the early part of May. A female in the collection at the

Pymatuning Museum was taken on April 13, 1941. Later, on April 16, 1941, I saw two at the Ohio end of the Espyville-Andover causeway. Mr. M. B. Skaggs observed it on April 26, 1936; and Messrs. Todd and Fricke saw it during May of that same year. In 1940, I saw one on April 19 and May 6, and at least five on April 28, in the Pymatuning Refuge area. Mr. Fricke observed it on May 6, 1945. On April 20, 1947, we observed ten in a flock at the Ohio end of the causeway. Mr. H. H. Harrison observed it on May 16, 1943.

On August 20, 1940, I saw three individuals in the region of the old corduroy road in the Pymatuning Refuge. I believe that they were migrants as none were seen earlier in the summer. On September 24, 1940, I saw one a short distance south of the Linesville spillway. Mr. C. B. Shoemaker recorded it on September 21, 1945. Two individuals were seen by the Pymatuning Group on September 12, 1948.

Two were seen south of the Linesville spillway on August 20, 1949 by Mr. John F. Mehner.

COMMON TERN

***Sterna hirundo hirundo* Linnaeus**

Although Sutton regarded the Common Tern to be "a fairly common and regular migrant", and Trimble (1940) states that it has been present at the Pymatuning each year since 1933, it certainly does not seem to have been observed with much regularity since 1940. It has been common on very few occasions. During the months of April and May of 1940, we saw this tern in fair numbers about Pymatuning Lake. Since then it has been seen only occasionally. None were ever recorded in the fall season.

According to Sutton, a male was collected by Mr. Welshons at Conneaut Lake on April 4, 1912, but the majority of his records pertain to birds seen or collected during the month of May. On April 26, 1940, we saw between twenty-five and fifty birds in the Pymatuning Refuge area. On May 14, 1940, an estimated fifty were seen at the same locality. It was seen quite commonly and in fair numbers during the early part of that May. In 1942, I observed a few about the lake between May 27 and June 2.

Sutton gave several summer records for Conneaut Lake. Trimble (1940) gave the following summer records for Pymatuning: June 7, 1936 (Trimble); July 2-4, 1936 (Todd); August 5-6, 1935 (Hicks). On June 19, 1941, I observed three birds on the Lower Lake near the site of the old Polleck Bridge, just north of Espyville. Mr. Shoemaker recorded it on June 1, 1943. Mr. Harrison counted twelve at Harts-town on June 3, 1943. Trimble stated that "it is quite likely" that this species was breeding at Pymatuning Lake. As far as I am aware, there never was any indication that this species ever nested here. I believe those individuals which have been recorded during the summer are merely non-breeding and wandering birds.

BLACK TERN

Childonias niger surinamensis (Gmelin)

According to Sutton, the Black Tern was "a fairly common and sometimes abundant transient visitant". He states that Mr. Welshons found two nests during the summer of a former year, about 1910, and that Mr. Langdon had seen several individuals throughout the months of June and July, 1926, and was led to believe that the birds were breeding. Since 1934, definite nesting records have been obtained at the Pymatuning Lake and at Hartstown. There is very good evidence that it nests regularly in the Smith Marsh and along the Conneaut Lake Outlet.

The first Black Terns apparently reach this region early in May: May 5, 1946 (Grimm); May 8, 1937 (Skaggs); May 8, 1941 (Grimm). Sutton gave a record of one which is said to have been taken at Conneaut Lake by Mr. Welshons on April 10, 1912; but this is a most unbelievably early date for this species. On May 21, 1940, Mr. Fricke and I found them to be very abundant at the Hartstown marsh. We estimated that there were at least five hundred birds in that vicinity, most of which were obviously transients. In the fall very few are ever seen after mid-September; but Sutton said that Mr. Welshons collected a female at Conneaut Lake on November 12, 1912. The latest date on which I have personally seen it was September 25, 1941.

Trimble (1940) recorded a nesting colony of about fifty pairs, located at Pymatuning Lake, northwest of Linesville, during May of 1934. "On May 21, nesting was just beginning, and on May 30, Mr. Fricke collected a set of eggs. It was placed on water-soaked reeds and grasses floating on water about a foot deep." On June 18, 1941, I located a nest in the Hartstown marsh which consisted of a mass of wet vegetation floating on the water's surface, with the two eggs barely held out of the water. Todd (1940) states that three eggs comprise a full set.

On June 25, 1940, I estimated that between twenty-five and thirty pairs were nesting in the marsh area at Hartstown. The birds were evidently very much disturbed by my presence, and I suspected that many of them had young. Time after time excited birds would dive at me and vociferously protest my intrusion into their domain. After some time, I discovered three of the dusky-brownish, downy youngsters sitting on a bit of floating debris about a hundred yards from the shore. As I watched them, the parent birds hovered above and fed them on the wing. I learned, too, that they could swim quite well, for on several occasions they entered the water and paddled around like miniature ducklings. Messrs. Harrison and Shoemaker observed young at the same locality on June 1, 1943. Mr. Harrison found seven nests at Hartstown on July 1, 1944.

Between 1935 and 1940, a number of nests were found in the Pymatuning Refuge area. I suspect that a few still nest in some part

of the area east of the old corduroy road. On June 25, 1941, I observed between thirty and forty adult birds in that vicinity. At the Smith Marsh they have been present each year; and, from their actions, I am certain that they are nesting there. I have seen between ten and thirty birds in that vicinity during the summer months. Numerous individuals have also been seen in the marsh area to the south of Conneaut Lake.

BRÜNNICH'S MURRE

***Uria lomvia lomvia* (Linnaeus)**

The only record for this rare straggler from coastal waters is that given by Sutton. "A specimen in winter plumage which was taken at Conneaut Lake by Mr. Thomas Garren of Pittsburgh, on December 3, 1903".

PASSENGER PIGEON

***Ectopistes canadensis* (Linnaeus)**

Sutton has given a rather detailed account of the extinct Passenger Pigeon in the present region. Pymatuning and the Conneaut Marsh were said to have been favorite roosting places. In the early days here, as elsewhere, the birds were often found in enormous flocks; and it is certain that some of them occasionally nested in the local wooded areas. Large flights were said to have occurred in 1870, 1876, 1878, and 1880, while a few small flocks were seen in 1883.

EASTERN MOURNING DOVE

***Zenaidura macroura carolinensis*
(Linnaeus)**

Sutton considered the Mourning Dove to be "a common summer resident", and he added that "it may also occasionally remain in winter when food is plentiful". It has been a common breeding species within the recent years, and apparently a number of birds regularly overwinter in the farming regions surrounding the Pymatuning Lake.

Migrants evidently arrive in the region during March, but it is not possible to get accurate data on first arrivals due to the fact that so many birds pass the winter in the region. By early April, doves are ordinarily common and are seen and heard throughout the farming regions. Nests with eggs are never found, however, until near the end of April, or early in May. Those found from mid-June onward undoubtedly represented second sets for the season. Nests are commonly found in thickets, along brushy fencerows, and sometimes in small coniferous trees. Occasionally nests have been found on the ground. Sutton found eggs laid in an old Blue Jay's nest which had been built on a low pine bough.

Doves are frequently observed during the winter months. On December 11, 1940, I saw a flock of about twenty-five in an orchard near Stewart's Corners; and on December 29, 1945, I observed at least

thirty in the very same locality. Mr. J. Glenn Crumb has observed anywhere from a few to as many as seventy-five birds about his home, south of Pennline, during the winter months of recent years.

YELLOW-BILLED CUCKOO *Coccyzus americanus americanus* (Linnaeus)

Sutton stated that the Yellow-billed Cuckoo was rather uncommon, both as a transient and as a summer resident. That has been the status of the species within recent years as well. In the spring it was never seen until about mid-May: May 16, 1940 (Fricke); May 19, 1941 (Grimm). I have seen it a very few times during the latter part of May and in early June. I saw one on Ford Island on August 26, 1941; and Mr. Shoemaker found it on August 23, 1947. Sutton recorded it at Hartstown on September 24, 1925. He also found a nest at Hartstown on June 29, 1927, which contained four half-grown young.

BLACK-BILLED CUCKOO *Coccyzus erythrophthalmus* (Wilson)

The Black-billed Cuckoo is much more common in the present region, both as a transient and as a summer resident, than is the Yellow-billed species. It occurs rather commonly in the mixture of thicket and pine plantations about the Pymatuning Lake, and, as Sutton says, "in the upgrown borders of woodlands, often near the roads". It seems to be more of a bird of the brushy thickets than of the deeper woodland or of orchard and shade trees, although it does occasionally occur in such areas also.

In the spring it apparently arrives early in the month of May: Mr. Fricke has seen it on May 8, 1941, and on May 15, 1940. During the month of June and the early part of July it is frequently seen, although it is more often heard. Mr. Shoemaker recorded it on August 23, 1947. I frequently saw it between September 3 and 8, 1943. Sutton said that in 1925 he saw them quite regularly until September 23, on which date only a single bird was seen.

Sutton found a nest with two eggs at Hartstown on May 20, 1922; another nest near Adamsville on May 23, 1922, held but one egg. A set of three eggs which he collected on May 25, 1922, was well incubated.

BARN OWL *Tyto alba pratincola* (Bonaparte)

The Barn Owl apparently has never been common in the Pymatuning region. It very probably remains in the region throughout the year but the meager records at hand do not include any observations of wintering birds. Sutton believed that the species was becoming more common in the region than it had been in former years. He found a pair nesting in a huge dead sycamore tree about three miles west of Linesville on May 17, 1925. Mr. Earl Huidekoper found a pair nesting in his large barn on the western shore of Conneaut Lake on July 10, 1917.

On October 7, 1941, Mr. R. L. Fricke flushed a pair of birds along the western edge of McNutt Knoll; but I do not believe that they remained in that vicinity for I was never able to locate them afterwards. In 1946, a pair nested in the silo on the Crumb farm south of Pennline. According to Mr. Crumb the pair raised two young, and the remains of a third was found when the silo was cleaned out prior to filling it that summer. Mr. Crumb also tells me that within the past two years these owls have nested in the old church at Conneaut Center, and in silos on the farms of Mr. Redmond and Mr. Thompson in the vicinity of Pennline.

EASTERN SCREECH OWL

***Otus asio naevius* (Gmelin)**

The Screech Owl seems to be a fairly common permanent resident in the farming sections of the present region. Sutton stated that it was very rare in the Pymatuning Swamp, where the Barred Owl constantly preys upon it. I, myself, have never found it in the more extensive tracts of swamp woodland; but it seems to inhabit the smaller tracts of upland woods in the farming regions. It was regularly seen and heard in the town of Linesville where it finds suitable abode in the large shade trees. On July 11, 1940, I observed three young birds perched on wires along the main business street of the town.

GREAT HORNED OWL

***Bubo virginianus virginianus* (Gmelin)**

Within recent years the Great Horned Owl has been a fairly common permanent resident in the wooded parts of the region although Sutton considered it as being uncommon during the period of his field work between 1922 and 1927. When exploring the tracts of hemlock forest surrounding the lake and swamp, I quite frequently flushed owls of this species. A number of birds have been trapped about the Pymatuning Refuge area, and quite a good many from the surrounding countryside have been probated for bounty in recent years.



SNOWY OWL



SCREECH OWL



BARRED OWL

GREAT HORNED
OWL



Mr. Crumb found a nest near Linesville on March 8, 1895, which contained two fresh eggs. On March 10, 1946, I was led to a nesting site on McNutt Knoll by the incessant commotion of a number of crows. Upon investigating the cause of the disturbance, I flushed an owl, apparently the male, from a hemlock tree. Upon turning about I saw another, which was undoubtedly the female, slip off a nest about forty feet up in the crotch of a red maple. It was a nest which a pair of Red-shouldered Hawks had occupied the previous season. Both of the owls were immediately pursued by the crows so I concealed myself and awaited developments. I could easily determine the position of the owls by the noise set up by the mobbing crows which was renewed with each movement the owls made. I shortly was aware that one of the birds was returning to the nest, and in about twenty minutes the female was back and settled again. I presume that she was incubating her eggs at the time. By mid-April the three young were quite large. They often stood up in the nest and peered at me whenever I approached the base of the nest tree.

On May 14, 1940, Mr. Fricke and I observed an adult and a fledgling about one and a half miles west of Shermansville. The young bird was well grown, but its plumage still showed traces of the juvenile downiness. It could fly quite well. On May 22, of the same year, we observed an adult and three well-feathered young birds in a tract of woods about a mile and a half northeast of Espyville.

A pair of these owls nested again in the nest mentioned above, located on McNutt Knoll, during the spring of 1948. On May 2 Mr. Sickles showed me two nearly fully fledged young which had been taken from the nest two days previously.

SNOWY OWL

***Nyctea scandiaca* (Linnaeus)**

The Snowy Owl has occasionally been recorded during the winter months. Sutton says that there were "but few records prior to the notable invasion of the species, which occurred in the winter of 1926-27". He cited several records of birds which were taken about Conneaut Lake and at Westford during the months of November and December of 1926. There were invasions of this arctic species during the winters of 1945-46 and 1949-1950, during which many birds were seen throughout the northwestern part of the state.

On November 16, 1941, Mr. Crumb told me that a Snowy Owl had been seen between Richmond Center and Pennline. On December 13, 1945, Mr. R. M. Sickles and I observed one perching atop the flagpole on the grounds of the Pymatuning Museum. A large female was taken in a trap near the museum on December 25, 1945; and on December 29 another individual was seen perched on the flagpole near the museum. The latter bird was presumably a male for it was a very white plumaged individual. On January 25, 1946, I saw one sitting on the ice of the lake just south of Ford Island. A large and very dark

female was taken at the Espyville end of the causeway by Mr. Robert K. Todd, March 7, 1946. Mr. Norman Sickles tells me that one was taken at the Pymatuning Fish Hatchery, near Linesville, on May 8, 1946.

NORTHERN BARRED OWL

***Strix varia varia* Barton**

Sutton stated that the Barred Owl was a locally abundant permanent resident, especially at Pymatuning Swamp, where it nested in the deeper woodlands. It was common also in the deciduous woods of the higher regions. Although these owls still occur in the region, they probably are much less numerous today than they were in the days of the old swamp, whereas the Great Horned Owl seems to have actually increased in numbers in recent years.

I have never found the nest of this owl, nor did Sutton find any nests with eggs. He observed an apparently mated pair near Hartstown on February 18-19, 1925; and on May 17, 1925, he saw a parent bird with three almost fully fledged young in a woodland near the Meadville Junction Pond. Mr. R. L. Fricke took two eggs from a nest which was located in a woodland near the eastern end of the Upper, or Linesville Lake, on March 17, 1938. The eggs were then about one-quarter incubated. It was an old hawk or crow's nest, situated about forty feet from the ground in a large beech tree and surrounded by hemlocks.

LONG-EARED OWL

***Asio otus wilsonianus* (Lesson)**

Sutton regarded this species as "a rather rare permanent resident". He had the following records for it in the present region: March 28, 1926, a male collected by Mr. M. G. Netting near Atlantic, and another individual seen on the same date; April 1, 1914, a mated pair collected by Mr. Welshons at Conneaut Lake; June 30, 1927, one seen at Atlantic; July 1, 1927, one seen north of Hartstown; and September 20, 1925, one seen at Crystal Lake, Hartstown.

SHORT-EARED OWL *Asio flammeus flammeus* (Pontoppidan)

According to Sutton, the Short-eared Owl was "a rather rare migrant and winter resident, which has been known to nest once in the present region". He indicated that it may have formerly been more common as a summer resident. I have personally observed only it twice. On April 23, 1946, I saw one about two miles south of Pennline. A few days later I observed another in Conneaut Township, about four miles north of Linesville.

Sutton said that Messrs. Huidekoper and Reynolds found a nest of this owl about April 20, 1926, but did not give the exact locality. Todd (1940) said that Dr. L. E. Hicks had several summer records for it in the Ashtabula, Ohio portion of the region and that he found a nest

there on May 31, 1931. He also stated that Mr. Robert Van Sicklin found a nest on Whaley Island during the month of May, 1935. It was built on dry ground and contained five eggs.

SAW-WHET OWL

***Aegolius acadicus acadicus* (Gmelin)**

There are very few records for the Saw-whet Owl in the Pymatuning region, and because of its retiring nature Sutton believed that it was probably more common than generally supposed. While I have never seen it myself, it should at least occur here during the winter months; and it may also be a rare permanent resident.

Sutton states that they found the remains of one near the old humus plant, along the south-bound railroad track, north of Hartstown, on March 28, 1926. One was seen by Mr. W. W. Andrews near Crystal Lake, Hartstown, on November 15, 1923. Another was shot by a hunter in the vicinity of Lower Lake, Hartstown, on November 20, 1924.

L. E. Hicks (1933) states that he found a nest on Hemlock Island in the Pymatuning Swamp on May 30, 1931. It was in a hollow stub in a grove of hemlock trees and contained three young birds.

EASTERN WHIP-POOR-WILL

***Caprimulgus vociferus vociferus* Wilson**

Sutton considered the Whip-poor-will to be an uncommon and local summer resident, which was not recorded in Pymatuning Swamp but in the surrounding woods and at Conneaut Lake. He said that on June 16, 1898, Mr. Todd recorded it as being fairly common near Hartstown. Mr. J. G. Crumb tells me that many years ago the Whip-poor-will was common in the wooded areas about the Pymatuning but that he has neither seen nor heard it in recent years. It certainly disappeared from most of the present region long before the big woodlands were all cut. For that matter, there are still some fair-sized wooded tracts where none of these birds have been seen or heard within recent years. About 4 A.M. on the morning of May 6, 1941, I was awakened by the incessant calling of one which was somewhere around the Traveler Hotel in Linesville. Mr. J. A. Van Sicklin, who was then proprietor of the hotel, also heard the bird and told me that it was the first one he had heard for a good many years. It was unquestionably only a transient for none were heard later in the vicinity.

EASTERN NIGHTHAWK

***Chordeiles minor minor* (Forster)**

The Nighthawk is tolerably common as a migrant but rather uncommon as a summer resident. The earliest date on which I saw it in spring was on May 16, 1941. During the summer months a few birds were seen occasionally, and I believe that a few pairs may have nested at times on flat-topped buildings in the town of Linesville.

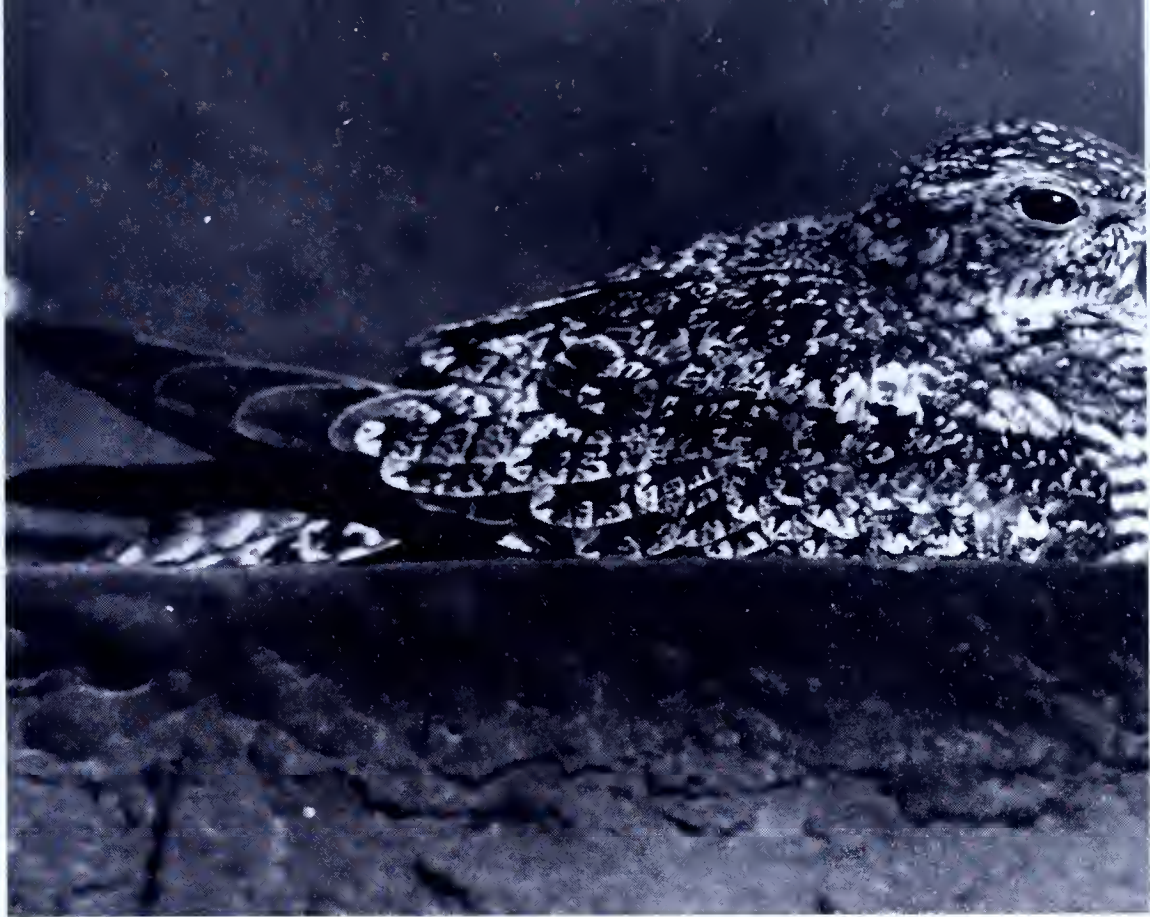


Photo Penna. Game Comm.

A few pairs of nighthawks may have nested at times on flat-topped buildings in the town of Linesville.

Migrating birds were often seen during the latter part of August and early in September, but I never witnessed any mass migration such as Sutton witnessed near Hartstown on August 25, 1925. On that date he says, "there must have been at least a hundred flocks, totalling probably ten thousand birds". The latest date on which I have seen them in fall was September 16, 1941. On that evening I watched four individuals leisurely flying along the lake near Linesville.

CHIMNEY SWIFT

***Chaetura pelagica* (Linnaeus)**

Sutton said that the Chimney Swift was "a common migrant and fairly common summer resident, not known to nest in the hollow trees at Pymatuning, apparently preferring the chimneys of the nearby towns". There has been little, if any, change in its status within the past two decades.

It arrives in the present region the last week in April or the first week in May: April 28, 1925 (Sutton, *fide* Bergstrom); April 29, 1941, and April 30, 1940 (Grimm). Throughout the summer months anywhere from a few to a dozen or more individuals were more or less regularly observed in the vicinity of Pymatuning Lake. They were also regularly seen and heard in Linesville and other towns. The latest date on which it was recorded in the fall was on September 21, 1945 (Shoemaker).

RUBY-THROATED HUMMINGBIRD

Archilochus colubris
(Linnaeus)

The Ruby-throated Hummingbird is a tolerably common summer resident, found in the deeper parts of the swamp forest and even in the towns. It arrives in the region during the early part of May during most years. Sutton states that it was recorded by Kirkpatrick, at Meadville, on April 25, 1896; but Sutton's earliest date of personal observation was May 4, 1922, at Hartstown.

During the summer months it was seen occasionally throughout the region, and it was quite frequently observed about Pymatuning Lake. Sutton stated that "hummingbirds were very fond of the jewel-weeds (*Impatiens pallida* and *biflora*) and were consequently very commonly seen all through the wildest parts of the swamp". Jewel-weeds are abundant throughout the swamp area; and we, too, have frequently seen hummingbirds feeding from their blossoms. Throughout the country, and in the towns, hummingbirds are often seen about garden flowers.

On July 23, 1941, I twice observed a female which was gathering down from an old cattail head on one of the floating islands off the eastern end of Ford Island. She undoubtedly was either repairing her nest or building a new one for a second brood.

In the fall, these birds were regularly observed until about mid-September. The latest date on which it was ever observed was on October 7, 1941, on which date Mr. Fricke saw one on McNutt Knoll.

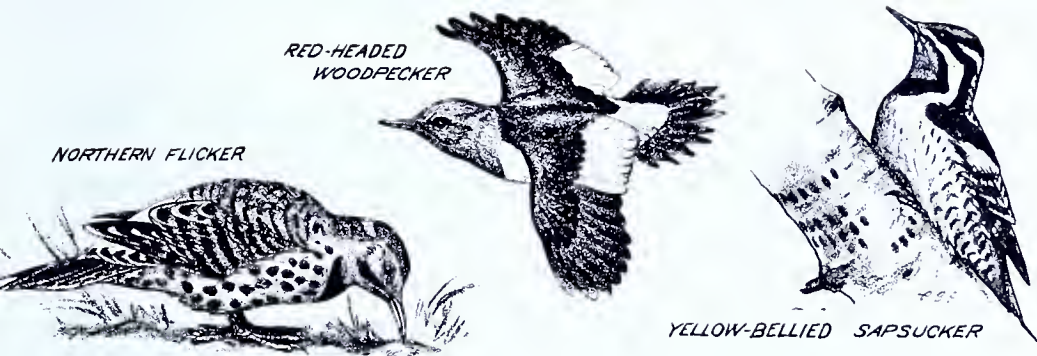
EASTERN BELTED KINGFISHER

Megaceryle alcyon alcyon
(Linnaeus)

The status of the Belted Kingfisher has apparently changed but little since the time of Sutton's report. It is a fairly common migrant and summer resident which is frequently seen about Pymatuning Lake. It was also often observed at Hartstown and along many of the smaller streams throughout the region. Although Sutton gave several winter records for it, it has not been recorded during the winter months of any recent year.

Kingfishers usually arrive between mid-March and the early part of April: March 15, 1946; April 1, 1941; April 4, 1940. In the fall I have never seen it later than the first week of November: November 6, 1941, being the latest fall date.

Sutton found a nest on May 12, 1922, which was located at least a half mile from any water. In this burrow he found seven eggs. On May 20, 1922, he located another burrow in a low bank, scarcely three feet in height, along a road which crosses the southern end of the swamp below Hartstown. It also contained seven eggs. On May 16, 1925, he located another nest in almost the identical spot. Mr. J. G. Crumb tells me that they nest regularly in the banks of Padan Creek, south of Pennline.



NORTHERN FLICKER

***Colaptes auratus luteus* Bangs**

The Flicker is a very common migrant and summer resident throughout the region, and it was occasionally observed during the winter months. There probably has been very little, if any, change in the local status of the bird since the time of Sutton's report.

The first spring arrivals undoubtedly reach this region late in March or very early in April, but exact first arrival dates are obscured by the presence of a few individuals during most of the winters. By mid-April it certainly becomes common and it is usually found in some numbers until the early part of November.

During the month of December 1940, I twice recorded individuals in the vicinity of McNutt's Knoll. On December 13, 1945, I saw about six in a wooded area near Gehr's Ponds, to the southeast of Shermansville. About the same number were seen on January 23, 1941, near the northern end of the old corduroy road in the Pymatuning Refuge; and individuals were seen about McNutt Knoll on several occasions during the winter of 1940-41. On February 1, 1946, one was seen along the road a few miles south of the refuge.

During the month of May the Flickers are busy with nesting activities. Sutton states that he found nests with seven and eight eggs on May 10 and 24, 1922, respectively. Young flickers are often out of the nest before the end of May, and many more are seen by mid-June. I observed several young birds in a woods west of Linesville, which were apparently not long out of the nest, on June 24, 1940.

NORTHERN PILEATED WOODPECKER

***Hylatomus pileatus abieticola* (Bangs)**

The Pileated Woodpecker is a rather uncommon, although by no means a rare permanent resident of the more extensive wooded areas. Sutton's fears that it was "doubtless nearing extinction" are apparently unfounded as there are undoubtedly as many of these great birds in the region today as there were two decades ago. Furthermore there seems to be good reason to believe that it is actually increasing in numbers.

I have both seen and heard Pileated Woodpeckers a number of times in the wooded tracts within the Pymatuning Refuge, in the Black Jack area south of Pennline, and in the wooded swamp between the Blair

Bridge Road and Hartstown. On the morning of April 13, 1947, I repeatedly heard the characteristic call of this woodpecker and I finally located it along a fencerow just a short distance north of Linesville.

RED-BELLIED WOODPECKER ***Centurus carolinus* (Linnaeus)**

The Red-bellied Woodpecker seems to be a rare and irregular permanent resident today, as Sutton said it was twenty years ago. It seems very doubtful that there has been any increase in its numbers, as has been the case with some of the other Carolinian species.

On January 17, 1940, I saw one at the home of Mr. J. G. Crumb, south of Penline, and was told that it had come to his feeding station there a number of times. On May 8, 1941, I saw one in the Pymatuning Refuge area near the mouth of Linesville Creek. Sutton gave an account of a nest which he found on May 16, 1923; and he said that on August 25, 1925, he saw a pair with three young in a woods about two miles northwest of Hartstown.

YELLOW-BELLIED SAPSUCKER ***Sphyrapicus varius varius* (Linnaeus)**

The Yellow-bellied Sapsucker seems to be a tolerably common transient visitant in the present region and formerly, at least, it nested in limited numbers. It was usually first observed in spring about the first or second week of April: April 5, 1941 (Grimm); April 14, 1944 (Shoemaker). Sutton observed a male at Hartstown on February 20, 1925, which he believed to have possibly been a winter resident. Numbers of these birds were often seen during the latter part of April, and recent records for it extend through most of the month of May. Mr. Shoemaker recorded it on June 1, 1943. Mr. J. G. Crumb tells me that he has occasionally seen them during the month of June. In 1941 he observed them on various occasions throughout the summer. Although no nests have been reported in recent years, it is possible that an occasional pair still nests in the Pymatuning country.

On June 16, 1923, Sutton located a nest in a wild portion of the swamp northwest of Shermansville. "Here the male was seen to go into the hole in a dead hemlock stub where he fed the female bird as she brooded over what I believe to have been her small young. I did not cut the cavity open, since I feared this would cause the birds to desert. The feeble buzzing cries sounded like those of young birds. This nest was situated about twenty feet from the ground. The tree stood somewhat in the open, near a number of living tamaracks." He had seen at least two mated pairs in late May of 1922; a mated pair was seen northwest of Linesville on May 17, 1925. Another pair were seen between Linesville and Espyville on July 1, 1927. A juvenile male was collected from a family of six young on September 1, 1925, one mile north of Hartstown (Sutton, 1928).

I have occasionally seen Yellow-bellied Sapsuckers during the month of September and early October; the latest date being October 10, 1941. Sutton stated that Mr. Bergstrom had seen one near Shermansville on October 15, 1925.

RED-HEADED WOODPECKER

***Melanerpes erythrocephalus
erythrocephalus (Linnaeus)***

Within recent years the Red-headed Woodpecker seemed to be rather local and decidedly uncommon. Sutton said that it was "a fairly common, but somewhat irregular, migrant and summer resident, occurring from latter April until October not only in the high dead stubs in the Swamp, but in the deciduous woods throughout the region, particularly along the outlet of Conneaut Lake, and in the open farm country west of Pymatuning". It quite evidently has decreased considerably in numbers within the past two decades.

Sutton stated that it rarely arrives in the region before the first of May. On May 4, 1941, Mr. J. G. Crumb told me that he had seen it at his farm south of Pennline on that day. He also recorded it again on May 2, 1944. On May 17, 1940, I saw a pair in that vicinity which were evidently nesting nearby. It was occasionally observed about the Pymatuning Lake country at various times during the summer months, but it was nowhere common. On May 18, 1941, I observed a few birds on Ford Island; but they were never seen there later; therefore I presume that they were migrants.

In the fall of 1940, I saw individual birds on several occasions between September 10 and 21. Sutton says that Mr. Bergstrom saw the last one on October 4, 1925, near Shermansville.

EASTERN HAIRY WOODPECKER

***Dendrocopus villosus villosus
(Linnaeus)***

The Hairy Woodpecker is a fairly common permanent resident in all of the strictly wooded areas, particularly in the more extensive tracts of swamp woods. Sutton stated that they were one of the most common birds in the old wooded Pymatuning Swamp. "Often in one small group of high dead trees two or three nests with young were found, and I am inclined to think there is a tendency among the breeding birds of southwestern Crawford County to congregate in the Swamp" (Sutton, 1928).

This species is seen with rather fair regularity in all of the larger tracts of woods about the Pymatuning Refuge, and the swamp area between it and Hartstown. It is almost wholly confined to such wooded areas during the summer months; but in winter it is frequently seen in the small tracts of woodland and occasionally even in orchards and open groves.

These birds mate and begin their nesting activities early in the spring. Nesting cavities were often drilled, and the eggs sometimes laid before the end of April. Sutton stated that he found a nest filled with half-grown young birds on May 18, 1922, and that twenty-six nests with young were found before the end of May. Nests which he found on May 16, 1925; May 25, 1922; and on May 29, 1933, each held five almost fully developed young.

NORTHERN DOWNY WOODPECKER *Dendrocopus pubescens medianus* (Swainson)

The Downy Woodpecker is a common permanent resident throughout the present region. It is regularly found in all types of woodland throughout the year. During the winter months it frequents wooded fencerows, orchards, and shade trees both in the country and in the towns. I have sometimes seen them searching for boring larvae in the stalks of cattail in the marshy areas, and in the stalks of corn in the fields. Sutton remarked that it was "apparently more constant in numbers throughout the year than the Hairy Woodpecker", and this certainly agrees with our observations during the more recent years.

This species apparently nests later than the Hairy Woodpecker as the birds were often still drilling nesting cavities during the latter part of April and the early part of May. Sutton said that he found cavities only partially completed on May 1 and 2, 1922, and that one was newly completed on May 13. The latter nest held four partially incubated eggs on May 23. A nest which he found on May 31 held half-grown young.

NORTHERN CRESTED FLYCATCHER *Myiarchus crinitus boreus* Bangs

The Crested Flycatcher is a fairly common migrant and summer resident, its status very probably having changed but little since the time of Sutton's report. It replaces the Kingbird in the well-wooded areas, but it was never as common as the latter species.

It arrives in the region about the last of April or the first week in May, more often the latter. May 1, 1941, and May 6, 1940, were early dates on which it was recorded at the Pymatuning Refuge. Sutton stated that Mr. First had observed it at Meadville, on April 28, 1914. In the fall most of the birds evidently leave the region before the end of August. Sutton observed it as late as September 9 at Hartstown.

Nest-building activity commences shortly after the birds arrive in the spring. Sutton observed a pair building at Dollar Lake, Hartstown, on May 5, 1922. Mr. Fricke observed a pair building near Linesville on May 21, 1942. Full sets of eggs were not found until late May or early in June. Sutton found a nest with six fresh eggs at Lower Lake, Hartstown, on May 31, 1924, and another, near Shermansville, with three well incubated eggs on June 16, 1923.

EASTERN KINGBIRD

***Tyrannus tyrannus* (Linnaeus)**

The Kingbird is a common migrant and summer resident throughout the region. They are constantly seen about the shores of Pymatuning Lake, and in the farming sections they are present almost everywhere. It undoubtedly is the commonest of the flycatchers in the present region. Sutton had also found them to be common during the years of his study. Its status has very probably changed but little since that time.

In the spring it arrived during the latter part of April or early in May: April 24, 1946; May 3, 1941; May 7, 1940. Sutton said that in 1925 he did not see it before May 17. He believed their late arrival had been due to severe weather prior to that date. In recent years it has generally been very common between May 1 and 15, which seems to be about the peak of the spring migration in normal years.

Kingbirds commonly nest in trees about the lake shore, and in orchard and shade trees all through the country regions. Nests are often completed during the latter part of May, and full sets of eggs have been found in early June. On June 2, 1922, Sutton found two nests with sets of four eggs and another with three. On July 17, 1940, near the mouth of Linesville Creek, I observed a pair feeding their young which were still in the nest. Another nest containing young was seen on June 26, 1947, along the south side of the refuge lake. It was placed on a limb overhanging the water about eight feet above the surface. An old nest was saddled on an adjacent limb, only a few feet away. I presume it was the one used by the same pair of birds the previous year. On June 10, 1947, Mr. Harrison found a nest with three eggs in Conneaut Marsh.

The Kingbird regularly leaves the region early in the fall. It is always common during the month of August; but very few are seen after the first week in September; the latest date on which I have seen them was September 10, 1941.

PHOEBE

***Sayornis phoebe* (Latham)**

The Phoebe is a fairly common migrant and summer resident, being found throughout the more open countryside; but its numbers are never equal to those of the Kingbird. It is seldom, if ever, seen very far from buildings, or bridges, except in the seasons of migration.

Dates on which the species was first seen in the spring varied between March 15 (1946) and April 4 (1940). Nests are often under construction by mid-April and, without an exception, all of those which I have seen were placed about either buildings or bridges. Full sets of eggs, usually four, were found between May 1 and 15. Sutton found a nest containing four eggs on April 30, 1922, east of Hartstown. He collected a nest with six eggs on May 15, 1923, west of Shermansville. Mr. J. G. Crumb told me on July 17, 1940, that a pair which nested at his home south of Pennline were incubating a second set of

eggs. Eggs of the Cowbird are commonly deposited in the nests of this bird. Sutton found one nest which contained four eggs of the Cowbird and only one egg of the Phoebe.

In the fall, Phoebes were regularly seen until the first or second week of October: October 10, 1940; October 6, 1945; October 5, 1941. Sutton stated that Mr. Hunter had seen it at Hartstown as late as November 26, 1921.

YELLOW-BELLIED FLYCATCHER

***Empidonax flaviventris*
(Baird & Baird)**

Sutton considered the Yellow-bellied Flycatcher to be a rare spring and an abundant fall migrant. I have never personally observed it in recent years nor has it been listed by any of the other observers.

"In the fall it appeared during 1925 on August 25, on which date I saw one bird near Crystal Lake. It was thereafter common in the alder growth about the lakes, and two immature specimens (male and female) were taken on September 7. Thereafter it increased even more in abundance, and one adult female was taken near Lower Lake on September 21. On September 24 at least twenty were seen, so that it was likely common for at least a week longer, though we have no later dates" (Sutton, 1928).

He had two spring records: a male taken by Mr. Kirkpatrick at Junction Hill on May 30, 1910; and a male which he collected himself near Crystal Lake, Hartstown, on May 18, 1922.

ACADIAN FLYCATCHER

***Empidonax virescens* (Vieillot)**

The Acadian Flycatcher is a rather uncommon and local summer resident. It was regularly found in a few wooded areas about the Pymatuning Lake, and it undoubtedly occurs in some of the other extensively wooded areas. Sutton considered it as fairly common but local in its distribution. He states that it nested only in the woodlands of the higher country and not in Pymatuning Swamp. I have found it only in the swamp woods and on the knolls immediately adjacent to the old swamp, always in woods with a mixture of hemlock and hardwoods, such as occurs near the Blair Bridge and on the McNutt Knoll. In both of these places I observed mated pairs during the late spring and early summer of both 1940 and 1941.

This flycatcher arrives in the region sometime between the first of May and the middle of that month: May 7, 1922 (Sutton); May 15, 1940 (Fricke); May 16, 1941 (Grimm). Sutton stated that on May 14, 1922, he located four nesting pairs, all to the west of Pymatuning and Hartstown. He found a nest with three eggs on June 3, 1922, and on June 17, 1923, he found two nests which held three eggs each. All of the nests were placed in hemlock or beech trees, usually on low-swinging limbs. In the fall it is seldom seen after mid-August. Sutton recorded it at Hartstown as late as September 14, 1925.

ALDER FLYCATCHER

***Empidonax trailii trailii* (Audubon)**

The Alder Flycatcher is a common summer resident about the lakes and marshes where thickets of alders and other shrubs provide suitable habitat for it. It was always present in some numbers about the Pymatuning Lake and the marsh areas of the region. Sutton had considered it as "locally and irregularly abundant". He found it nesting throughout the old Pymatuning Swamp, at the head of Conneaut Lake, and locally in the Conneaut Marsh.

The first spring arrivals are regularly noted about mid-May: May 14, 1941, and 1947; May 15, 1940. From that time until mid-summer its characteristic call note is heard practically wherever there are suitable thickets, particularly of alders. It is commonly heard in the thicket of shrubby dogwoods and honeysuckles surrounding the Pymatuning Museum on Ford Island. To my ear the birds in this region invariably gave the sneezy, two syllabled call which Mr. Roger T. Peterson has likened to the words *fitz-bew*, and which he attributes to birds inhabiting the Ohio region.

Nests of the Alder Flycatcher are not easily found since they are concealed in the all but impenetrable thickets, often in areas where the footing is precarious. Records from various parts of the region indicate that full sets of eggs, usually three in number, are laid about mid-June. Mr. Fricke found nests near Conneaut Lake on June 16 and 19, 1947. Sutton found a nest with two eggs, about three miles south of Linesville, on June 16, 1923; and on June 18 he collected it. On the latter date it contained three eggs. He stated that he had seen nesting birds at the head of Conneaut Lake on August 5, 1924. He found well-developed young in a nest, about two miles west of Shermansville, on August 21, 1925. Mr. Harrison found two nests with eggs at Smith Marsh on June 13, 1947. Mr. Swoger found a nest with four eggs at that place on June 17, 1944.

In the fall the birds are so silent that it is practically impossible to distinguish them from other small *Empidonax* flycatchers. It apparently remains in the region at least until the latter part of September. Mr. Shoemaker recorded it on September 14, 1946; and Sutton found it as late as September 23, 1925, near Hartstown.

LEAST FLYCATCHER

***Empidonax minimus* (Baird & Baird)**

Sutton considered the Least Flycatcher as a fairly common migrant, as a rule more noticeable in the spring than in the fall, but rather rare as a summer resident. In recent years it has been recorded fairly often during the spring migration and occasionally in the fall, but I know of no recent breeding records. Nevertheless it may occasionally nest here.



Photo by A. A. Allen.

Top—Phoebe at nest. Bottom—Wood Pewee feeding young.

Photo by A. A. Allen.



It apparently arrives in the region during the early part of May. Sutton said that Mr. Langdon had seen it at Conneaut Lake on May 1, 1926. Our records since 1940 range between May 5 and 15. On May 12, 1946, I heard one near the Pymatuning Museum on Ford Island, and several others were located in various parts of the refuge area.

Sutton located a partially completed nest of this species in an old apple tree near Hartstown on May 29, 1922. He found the set of eggs still incomplete on June 4. He observed another pair in an aspen copse about three miles north of Hartstown on June 2, 1924; and on July 2, 1927, he saw a pair near Linesville.

Fall records for this flycatcher are few; and most sight records are, of course, questionable. Sutton took a specimen on August 28, 1925, and observed a bird near Hartstown on September 17. Mr. Shoemaker recorded it on September 1, 1944.

EASTERN WOOD PEWEE

***Contopus virens* (Linnaeus)**

The Wood Pewee is a common migrant and summer resident. It occurs in practically every wooded area, from the deepest of the swamp forests to the rather open, grove-like sugar maple woods.

The first Wood Pewees are usually seen or heard about the second week of May: May 7, 1922 (Sutton); May 11, 1940 (Fricke); May 16, 1941 (Grimm). In the fall they are regularly recorded until about mid-September with occasional birds being seen during the latter part of that month. Sutton observed it at Hartstown on September 24, 1925; and Mr. Shoemaker recorded it on the same date in 1943.

Nests of the Wood Pewee are usually found in the latter part of May and in early June. Sutton found a nest northwest of Hartstown which still contained half-grown young as late as September 8, 1925. He believed that it may have been a second brood for the season.

OLIVE-SIDED FLYCATCHER

***Nuttallornis borealis* (Swainson)**

The Olive-sided Flycatcher is a rare migrant in the present region, and it has also been recorded as a very rare summer resident. Sutton stated that he did not find it in midsummer; and I did not record it any time in recent years; but Hicks (1933) stated that he observed it on June 16, 1932, on Hemlock Island in the Pennsylvania portion of the old swamp. On the same date he located a nest across the state line in Ashtabula County, Ohio.

The few spring records which we have for the region are all for the latter part of May. On May 31, 1924, Sutton collected a male and observed three other individuals near Hartstown. He stated that one was seen by Mr. Langdon at Conneaut Lake on May 18, 1926. Mr. Todd (1940) stated that he collected one at Shermansville on May

20, 1933. Mr. Fricke observed it in a woods south of the Linesville spillway on May 26, 1941; and Mr. Shoemaker recorded it on May 21, 1943.

Fall records for this bird are even fewer than those for the spring. On September 18, 1925, Sutton collected a male east of the Lower Lake at Hartstown. He said that Mr. Bergstrom had observed one at Shermansville on September 29, and October 1, 1925.

NORTHERN HORNED LARK

***Eremophila alpestris alpestris*
(Linnaeus)**

Sutton had one sight record for this race of the Horned Lark, northwest of Hartstown on February 20, 1925. "In one field was a male Prairie Horned Lark, chirping anxiously, and rapturously singing at intervals. In the next field were the larger, darker, and more reddish birds moving about in a compact flock. None of these were singing, and the flight of one was a signal for all to fly. Their throats and superciliaries, also, were noticeably yellower". As far as I can determine, this stands as the only record of the occurrence of the Northern Horned Lark in the present region.

PRAIRIE HORNED LARK

***Eremophila alpestris praticola*
(Henshaw)**

Sutton stated that the Prairie Horned Lark is "a fairly common but locally distributed permanent resident, which has become more abundant during recent years with the opening up of farming sections". Since that time, a reversal in land use has taken place; and many thousands of acres of land which was once cultivated have been reverting into brush. As a consequence, one can with certainty expect such field inhabiting species as the Prairie Horned Lark to decline in numbers. Where the land is still farmed, and the wide expanses of fields persist, this bird is still found in fair numbers.

Although I have seen these larks at all seasons of the year in the country about Pymatuning Lake, they were always most numerous during the latter part of the winter. I frequently saw flocks of from ten to thirty birds during the winter of 1940-41, usually in fields which had been planted to winter wheat. Since then I have seen them less frequently. Mr. C. B. Shoemaker recorded them rather regularly on his visits until the fall of 1944, but he did not find any on six field trips to the region between 1945 and 1947. On April 13, 1947, I saw a few birds in the open farming country in Ashtabula County, Ohio, not far from the Pymatuning Lake; and on April 20, we saw an individual in similar country north of Linesville.

I was never fortunate enough to discover the nest of this bird although I am sure that they nested on Ford Island during the spring of 1940. During the month of April of that year a male sang almost

constantly from a fence post between the museum and the service buildings, and later in the season I observed young birds in that same vicinity. On June 27, 1940, I observed a pair of adult birds and five young ones feeding in a plowed field a little to the east of the museum. Todd (1940) states that Mr. Dille found a nest near Espyville on April 11, 1933.

TREE SWALLOW

***Iridoprocne bicolor* (Vieillot)**

The Tree Swallow is an abundant migrant and a common summer resident. In the breeding season they are always found about the lakes and marshes, and I never noticed any appreciable fluctuation in their numbers although Sutton said that this swallow was "irregularly common" in summer.

The Tree Swallow is regularly the first of the swallows to appear in the spring. Mr. Shoemaker observed them as early as March 26, 1943; and I saw a few on March 28, 1946. It is always seen during the early part of April: April 4, 1940, and April 6, 1941 (Grimm); April 14, 1945 (Greves). During the big swallow flights of the latter part of April and early May, the Tree Swallow is always abundant. It is equally as numerous when the migrating flocks appear again about mid-August. Very few are ever seen after mid-September, and by the last of that month even the last stragglers disappear.

During the breeding season numbers of these swallows are regularly seen in the Pymatuning Refuge, at Hartstown, Smith Marsh, and in the Conneaut Marsh. In all of these places there are numerous dead snags and standing dead trees, with many natural cavities and abandoned woodpecker holes for nesting sites. Sutton found a nest on May 13, 1922, which contained two eggs; and full sets of from four to six eggs have been found during the latter part of May. A pair which I observed on June 15, 1940, in the refuge area near Linesville, were very busy carrying food to their brood of young. On June 25, 1940, I found many young birds on the wing in the marsh area at Hartstown. On July 5, 1947, Mr. H. H. Harrison witnessed the young leaving a nest in the Pymatuning Refuge.

BANK SWALLOW

***Riparia riparia riparia* (Linnaeus)**

Bank Swallows are often quite common during the summer months about Pymatuning Lake, and they are regularly abundant during the spring and fall migrations. At times literally thousands of these birds swarm over Ford Island. They are frequently the most numerous of swallows during the migration periods. Sutton, however, said that the Bank Swallow was "a rare but regular migrant" and that it was even much less common and local as a summer resident.

In the spring, this species is not usually seen until the latter part of April, and the mass migration always occurs during the first two weeks



Photo by the author.

Nesting site of Bank Swallows near Pymatuning Fish Hatchery.

of May. The earliest date on which I have seen it was on April 16, 1941. In late July or early in August large flocks are seen again. Stragglers are sometimes seen well into the month of September. Mr. Shoemaker recorded it between September 22 and 28, 1941. It usually associates with other species of swallows during migrations.

Sutton found the bird nesting in two localities; a high, dry bank six miles east of Hartstown, and along French Creek near Meadville. Within recent years they nested in a gravel bank south of Pennline, where I found them in 1940 and in 1942. In the spring and summer of 1941 a large colony was established in a recently excavated bank at the Pymatuning Fish Hatchery near Linesville. Mr. Shoemaker observed them nesting there on June 1, 1943. On June 11, 1944, Mr. Harrison estimated there were seventy holes in this bank. On June 9, 1947, Mr. Harrison discovered a new colony in a bank along the highway between Conneaut Lake and Hartstown.

**ROUGH-WINGED SWALLOW *Stelgidopteryx ruficollis serripennis*
(Audubon)**

The Rough-winged Swallow is a regular migrant and summer resident, although it was never very numerous as compared with most of the other species of swallows. Sutton had considered it as "a rare and

somewhat irregular summer resident", and he stated that "probably this species of the Carolinian Zone has come into the region only in recent years".

The first Rough-winged Swallows are first noted in spring about mid-April: April 14, 1941; April 19, 1940. They are often seen in the mixed flocks of swallows. In the fall it was seldom seen after the end of August. Mr. Shoemaker recorded it on September 1, 1944.

Sutton found this species nesting at Hartstown, a little to the north of Adamsville, and at Conneaut Lake Park. At the latter locality, on May 14, 1922, he observed several pairs nesting in cracks and holes in the cement abutments near Hotel Conneaut. I have seen them so frequently along the Espyville-Andover causeway of recent years, that I strongly suspect that they nest there in crevices of the stone rip-rap. At Hartstown, on May 15, 1922, Sutton found a nest which was built about four feet back in a drain pipe.

Early in the month of June, 1941, I observed a few of these swallows along the edge of Pymatuning Lake, near Linesville, and in the vicinity of a newly excavated gravel bank. On June 11, I noticed that there were several holes in the soft sandy soil near the top of the bank; and only four or five inches back from the entrance of one hole I found a nest with four eggs. It was lined with the dried needles of pitch pine obtained from a plantation of these trees just above the new cut. When I revisited the nest on June 24, I found that four newly-hatched young were present. Mr. Harrison found them nesting at the edge of the Bank Swallow colony, near the Pymatuning Fish Hatchery, on June 15, 1944.

BARN SWALLOW

***Hirundo rustica erythrogaster* Boddaert**

The Barn Swallow is a common migrant and summer resident. It is commonly seen throughout the summer months in the open farming country where it regularly nests in the barns. Numbers of these swallows are frequently seen flying over the lakes and marshy areas where insects are often more or less abundant.

In the spring the species is regularly observed during the early part of April, arriving shortly after the first Tree Swallows: April 5, 1940 (Grimm); April 14, 1944 (Shoemaker); April 14, 1945 (Greves). They are often common among the mixed flocks of swallows which migrate through the region in late April or early May, and again during the latter part of August and early September. Stragglers are often seen late in September. It was seen as late as October 5, 1940, by Messrs. Shoemaker and Harrison, and myself.

Many of the local birds are beginning to nest by mid-May, and full sets of eggs are sometimes found by May 20. The usual number of eggs is five, but occasionally nests with only four, or as many as six eggs are found. On June 28, 1940, five young left their nest in the

tool house at the Pymatuning Refuge; and two weeks later the female was incubating a second set of eggs in the same nest. The four young of the second brood were almost fully fledged on August 6 and left the nest a day or two afterwards. On July 16, 1940, Mr. J. G. Crumb told me that the swallows in his barn were incubating eggs of their second broods. Apparently two broods a season is commonplace, if not the rule.

While barns and similar buildings constitute the generally accepted nesting site, Sutton found two nests that were built beneath a bridge. "On June 16, 1923, two nests, each with five eggs, were found underneath the bridge which spans the Shenango west of Shermansville." During the summer of 1946, Mr. R. M. Sickles experienced difficulty in trying to discourage a pair of these swallows from building their nest on top of a pendant light globe, in the open passageway at the Pymatuning Museum.

NORTHERN CLIFF SWALLOW

***Petrocheledon pyrrhonota
albifrons (Rafinesque)***

Huidekoper (1850) wrote in 1846, . . . "The oven-swallow (Cliff Swallow), which is now quite common, made its first appearance only some eight or ten years ago". It was common about the barns throughout the region as late as twenty years ago (Sutton) and Todd (1940) stated that "at the present time there are probably more colonies in Crawford County, particularly in the vicinity of Pymatuning Swamp, than in any other area of equal size in our region". Mr. Todd, however, did state that the species had progressively disappeared from most of Western Pennsylvania as well as from other parts of its former range.

When I commenced field work in the region in 1940, I searched in vain for the colonies of these swallows where the birds had formerly nested. Cliff Swallows were the rarest of all of the local species, even during the periods of migration, although a few individuals were seen fairly regularly in the mixed flocks of migrating swallows. I almost felt certain that the species was no longer breeding in the region; but on June 1, 1943, Mr. C. B. Shoemaker located six nesting pairs at the barn on the Iron's farm, where Route 6 crosses Linesville Creek. This was one of the places where a large colony had existed in former years.

PURPLE MARTIN

Progne subis subis (Linnaeus)

The Purple Martin is a regular and common migrant and summer resident in the region at the present time, although Sutton considered it to be "a rather uncommon migrant and a very local summer resident" two decades ago. There are several thriving colonies of this bird in and about the towns of Linesville and Conneaut Lake. It is very probable that it has increased in numbers during the past twenty years.

The first Purple Martins arrive early in the month of April: April 1, 1946; April 8, 1941; April 7, 1940. In the fall it departs quite early in the season, often leaving well before the end of August. I occasionally observed stragglers until about August 25; and Mr. Shoemaker saw a few on August 23, 1947.

Sutton states that Mr. Todd saw a large colony at Linesville on June 16, 1897. It therefore seems that the birds have been regularly present in this town for fifty or more years. In recent years there have been a half dozen or more colonies in and near the town, and it is very likely that additional colonies would establish themselves if suitable houses were erected for them. I knew of no uninhabited martin house in the community.

These birds never seemed to be unduly disturbed by the presence of English Sparrows, for they seem to be able to evict the sparrows from quarters in which they desire to nest. Full sets of from four to six eggs were laid between mid-May and the first of June.

NORTHERNBLUE JAY *Cyanocitta cristata bromia* Oberholser

The Blue Jay is a common permanent resident, particularly in the swamp forest of the Pymatuning area. They are frequently seen in the remnants of the hemlock swamp forest about the Pymatuning Refuge, in the old swamp country between the Blair Bridge road and Hartstown, in the Black Jack area, and at the Jumbo Woods. Occasionally they are seen in the less heavily wooded parts of the region. Sutton said that he had found them to be particularly abundant in the southern extremity of the Pymatuning Swamp, near Hartstown.

Sutton had found nests, with sets of five eggs, between May 7 and 22, 1922; and on the latter date he observed a pair which were just building their nest. All of these nests, except one, were located either in white pine or hemlock trees. Jays are ordinarily extremely noisy, but during the breeding season they are among the most taciturn of birds.

EASTERN CROW *Corvus brachyrhynchos brachyrhynchos* Brehm

The Crow is a regular and very common summer resident, being commonly seen from late February until November; but they are very seldom seen during the intervening winter months. Only during the winter of 1946-47 did I observe them at all during the months of December and January; then they were not very numerous. As a rule very few Crows are ever seen until after the middle of February, but then their numbers increase rapidly, and by early March they are usually quite common. Sutton found them abundant in the Pymatuning Swamp between February 18 and 20, 1925; and he assumed that they were winter residents from regions to the north. It is very probable that they were birds which had only recently come into the region.

Crows are exceedingly noisy except when they break up into mated pairs and begin nesting in the wooded areas. Most often, upon approaching a nest, the birds will fly away in silence. Many of the local sportsmen regularly hunt crows from early spring until fall, but, in spite of the number which were killed, no depletion was ever evident in their numbers. Many of the duck nests which are found rifled by predators are probably destroyed by the Crow. It is by far the commonest and most widespread of egg-eating predators.

Nests with full sets of four or five eggs are found from the early part of April onward; many nests hold young birds by late April or early May; and young birds are often seen out of the nest the latter part of May or early in June. Sutton found a nest three miles northwest of Hartstown on May 7 which contained four half-grown young.

BLACK-CAPPED CHICKADEE

***Parus atricapillus atricapillus*
Linnaeus**

The Black-capped Chickadee is a very common permanent resident, occurring in practically every part of the region. In the winter months they frequently are found close to human habitations, even in the towns; and they are regular visitors to the feeding stations where suet and seeds are provided for winter birds. Even in the middle of the winter, however, little bands of these birds are always encountered in the deepest woods. In the swamp areas I have often seen them feeding upon the persistent fruits of the poison sumach (*Rhus vernix*) in midwinter.

Tufted Titmouse.

Photo by Karl Maslowski.



During the breeding season the birds are rarely seen except in the wooded areas, and in the expanses of semi-wooded marsh and swamp. On April 3, 1941, I observed two individuals which were busily engaged in excavating cavities, presumably for nesting purposes. One of these was about six feet from the ground in a punky, dead yellow birch stub which stood at the very edge of the zone of swamp shrubs off McNutt Knoll. The other was about fifteen feet from the ground in the dead top of an aspen tree, in a thicket on the Pymatuning Refuge, near Linesville. Sutton stated that Dr. O. E. Jennings found a nest near Lower Lake, Hartstown, on May 30, 1924, which held nine well-incubated eggs. I observed a pair carrying food to their young in a nest, at the edge of McNutt Knoll, on May 31, 1940. It was in a dead yellow birch stump. Of twenty-eight nests found by Dr. Sutton and his assistants, three were in birch stubs, one in a tamarack; and all of the rest were in slender dead aspens.

Throughout the winter months the Chickadee is one of the most confiding and sociable of our birds, travelling about the woods, orchards, and thickets, with such other winter residents as the White-breasted Nuthatch, Downy Woodpecker, and the Golden-crowned Kinglet. With the approach of spring the bird's sweet but plaintive, two-syllabled whistle is often heard in the woodlands. I heard it on McNutt Knoll on the morning of February 16, 1940; and it was generally heard during late February or early in March of every year.

TUFTED TITMOUSE

***Parus bicolor* Linnaeus**

According to Sutton, the Tufted Titmouse was virtually unknown in the present region fifty years ago. He stated that Mr. Todd did not find it during his visits to the Pymatuning country around the turn of the century. Mr. Kirkpatrick had seen it at Meadville on December 23, 1890. Then he did not see it again until sometime in the year 1908. Sutton saw one bird near Stewart's Corners on May 7, 1922; and on May 16, 1923, he found a female building a nest about two miles northwest of Hartstown. He said that during 1924 and 1925 the species became more common everywhere. Today it is a fairly common permanent resident throughout the region.

Tufted Titmice are seen regularly throughout the year; but the Black-capped Chickadee always exceeds it in numbers, three or four to one. Except during the winter season, it was largely confined to the strictly wooded areas; and they are frequently seen in the hemlock swamp woods. During the winter months they are seen everywhere throughout the farming regions, and they frequently come to feeding stations about the home grounds. At this season they often associate with chickadees, nuthatches, and other winter birds.

During the month of May the Tufted Titmice are always busy with nesting activities. Unlike the chickadees, these birds regularly seek natural cavities or abandoned woodpecker holes for nesting purposes. On May 22, 1940, Mr. Fricke and I observed a pair, in a woodland

near Espyville, which were carrying building material to a cavity high in a large beech tree.

RED-BREASTED NUTHATCH

***Sitta canadensis* Linnaeus**

The Red-breasted Nuthatch seems to be a rather uncommon migrant and an irregular winter resident. In former years, at least, it occurred also as a rare breeding species. On July 2, 1927, Sutton located a nesting pair about a mile south of Linesville in a rather dense stand of hemlocks. L. E. Hicks is reported to have found other breeding pairs on Hemlock Island, north of Espyville, and to have located a nest in the Ashtabula County, Ohio, portion of the old swamp (Todd, 1940). I have never been able to find any evidence of its breeding in the region within more recent years, but there is always a possibility that a few pairs may occasionally breed in the wilder portions of the remaining swamp forest.

Occasionally, between September and May, this bird is seen in the wooded areas, most frequently in the hemlock forests; but it seems to be most common during the migrations in October and again in late April or early in May. It was never considered numerous. Two individuals regularly fed at the feeding station which Mr. Crumb maintained at his home south of Pennline, during the months of February and March, 1941. He has occasionally had them come during other years. Sutton said that between February 19 and 21, 1925, he saw numbers of them throughout the swamp.

NORTHERN WHITE-BREASTED NUTHATCH

***Sitta carolinensis*
cookei Oberholser**

The White-breasted Nuthatch is a common permanent resident. It was observed with fair regularity throughout the year in all parts of the region. During the winter months they are often seen in orchards and in the shade trees in the towns. They are always easy to entice to the home grounds with bits of nut meats, seeds, or suet. At this season they usually associate with other species of birds.

With the approach of spring most individuals retire to the wooded areas to nest and rear their young. Nesting activities are started during the early or middle part of April, the young having been observed in the nest as early as mid-May. Sutton found a nest west of Shermansville on May 16, 1922, which contained six young birds. Mr. Fricke found a pair near Linesville on May 21, 1942, which were feeding a brood of young in the nest.

BROWN CREEPER

***Certhia familiaris americana* Bonaparte**

The Brown Creeper is a rather common transient but is uncommon and irregular as a winter resident. In the past it has been known to breed occasionally in the Pymatuning Swamp, and there is a possibility

that it may still occur as a rare breeder in the wilder portions of the swamp, although I know of no very recent records.

These birds were most frequently seen during the spring and fall migrations, between mid-April and mid-May, and again in the fall during the month of October. In the winter season it is seen at intervals, particularly in the hemlock forests; but it is generally quite rare.

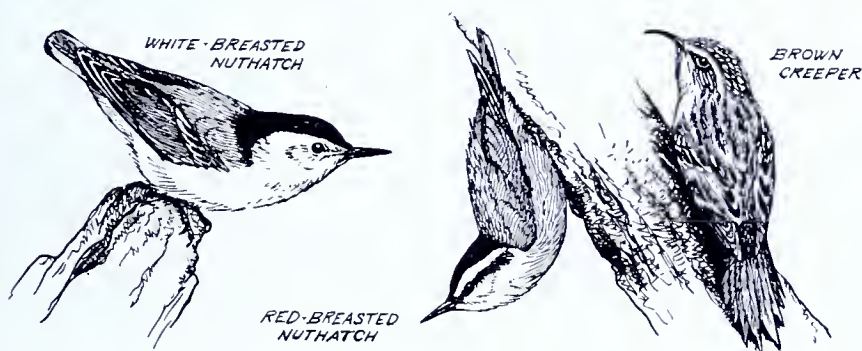
Sutton gave several breeding records for the Pymatuning Swamp. Mr. Todd saw a family of well-developed young, roaming the woods with their parents, on June 25, 1895. Sutton observed a nesting pair south of Linesville on April 27, 1922, and again on May 16, 1925. On August 21, 1925, a pair with fully fledged young were seen about two miles north of Hartstown. Todd (1940) states that Mr. H. McQuiston found a pair building a nest in the swamp south of Shermansville during May, 1936.

OHIO HOUSE WREN *Troglodytes aedon baldwini* Oberholser

House Wrens are very common migrants and summer residents throughout the present region. They are found in habitats ranging from the deep swamp woods to the home grounds in the towns. Sutton said that Mr. Todd apparently did not find it in the Pymatuning Swamp during his visits there about the turn of the century, yet he found it far more frequently in the wooded swamp than in the towns or farmyards. It undoubtedly has increased greatly in numbers with the settlement of the country and is probably still increasing in numbers.

The first House Wrens usually arrive during the latter part of April: April 20, 1941, and April 22, 1946 (Grimm); April 24, 1922 (Sutton). Their energetic, bubbling songs are heard with increasing frequency during the early part of May. By mid-May most of the birds are nest building. Full sets of eggs have been found as early as May 25, and broods of young are frequently raised in July or early August.

In the fall this species is regularly observed until the latter part of September, or occasionally in early October. I observed one on October 5, 1941; and Sutton stated that Mr. Bergstrom had seen it on October 4, 1926.



EASTERN WINTER WREN

***Troglodytes troglodytes hiemalis*
Vieillot**

Winter Wrens are tolerably common as transients during April and early May, and again during late September and October. They are rather rare and irregular as winter residents between November and March. In the past it may have occurred as a breeding species. While Sutton observed two birds west of Linesville, on May 4, 1922, which he said were apparently mated, he evidently found no evidence of actual nesting anywhere in the region. A male at McNutt Knoll was singing beautifully on April 22, 1941. The members of the Pymatuning Group recorded it on May 12, 1946. I have seen it in the fall, on Ford Island, as early as September 8, 1943.

CAROLINA WREN

***Thyrothorus ludovicianus ludovicianus*
(Latham)**

Sutton had no records for the Carolina Wren, but he made the prediction that it would "doubtless extend its range to include the present region". On April 9, 1941, I heard a male singing in the woods west of the marsh near Blair Bridge; and later I saw the bird. Another individual was seen in this same general area by members of the Pymatuning Group on May 2, 1942. On July 17, 1941, I found another singing male at the eastern end of Ford Island. I know of no nesting records for the region. Such records as are available could well pertain to stragglers.

PRAIRIE MARSH WREN

***Telmatodytes palustris dissaëptus*
(Bangs)**

The Prairie Marsh Wren is a locally common migrant and summer resident. Sutton considered it to be sporadically abundant, but he did not find it at all during some seasons. He believed that it was a relatively new addition to the regional avifauna, since Mr. Todd apparently did not find it in the present region during his visits shortly before the turn of the century. Within recent years, at least, it **has** been a regular and common breeding species wherever suitable habitat was present. It is always fairly numerous in the marsh extending from the vicinity of the old corduroy road, in the Pymatuning Refuge, to the vicinity of Hartstown; and it has been found regularly in marsh areas about Conneaut Lake and elsewhere.

In the spring the first individuals are always noted early in the month of May: May 2, 1941, and May 9, 1940 (Grimm); May 13, 1942 (Fricke). By the middle of the month they are usually present in some numbers in all of the local nesting areas. It is regularly observed in the fall until the middle or latter part of September. On September 19, 1940, I heard a male singing in the marsh near Blair Bridge. I saw one at Smith Marsh on October 2, 1942. Sutton stated that Mr. Bergstrom had seen one near Shermansville on October 2, 1925.



Photo by the author.

Nest of the Prairie Marsh Wren in the marsh near Blair Bridge.

Nests are often constructed, and the eggs laid before the end of May. A number of dummy nests are usually constructed for each structure that is actually used. Very probably not more than one nest out of five or six is used for egg-laying. Mr. H. H. Harrison found a nest with five eggs in Conneaut Marsh on June 15, 1947, and on June 13, 1944, found a female incubating eggs in the marsh near the Blair Bridge.

SHORT-BILLED MARSH WREN

***Cestothorus platensis stellaris*
(Naumann)**

Sutton considered the Short-billed Marsh Wren to be "a rather rare and very local migrant and summer resident at Pymatuning Swamp and Conneaut Lake". Its status during more recent years has been very much the same. The habitat of this wren is the wet, grassy meadow as contrasted with the cattail marsh which the Prairie Marsh Wren inhabits.

Sutton found them in an open, grassy marsh west of Shermansville; in a wide, savannah-like area southeast of Hartstown; in Conneaut Marsh; and in the wet, grassy meadows about Conneaut Lake. Mr. Fricke found them in a number of grassy marshes about the Pymatuning Lake between 1935 and 1940. During the summer of 1940, I observed them on a number of occasions between May and August in

a grassy swale along the northern border of the Pymatuning Refuge. A male was heard singing there on August 9 and 22. It probably arrives in the region early in May for Mr. Fricke found them at the above mentioned locality on May 6, 1945, and on May 9, 1940. In the fall Sutton observed them at Lower Lake, Hartstown as late as September 22, 1925.

On June 15, 1947, Mr. H. H. Harrison found two nests in the Conneaut Marshes; and he states that a colony of the birds was present. He later observed young birds leaving a nest.

EASTERN MOCKINGBIRD

***Mimus polyglottis polyglottis*
(Linnaeus)**

Todd (1940) states that Dr. L. E. Hicks had observed an individual about one mile south of the Pymatuning Dam, which is located near Jamestown, on August 21, 1932, and had found it nesting across the state line in Ohio.

CATBIRD

***Dumetella carolinensis* (Linnaeus)**

The Catbird is a very common summer resident throughout the region. Sutton said that Mr. Todd found it numerous during his visits between 1895 and 1898. Sutton himself considered it to be "almost excessively abundant" and most common in the "wildest, wettest parts of the Swamp". They are found regularly throughout the summer months in swamp and upland thickets everywhere.

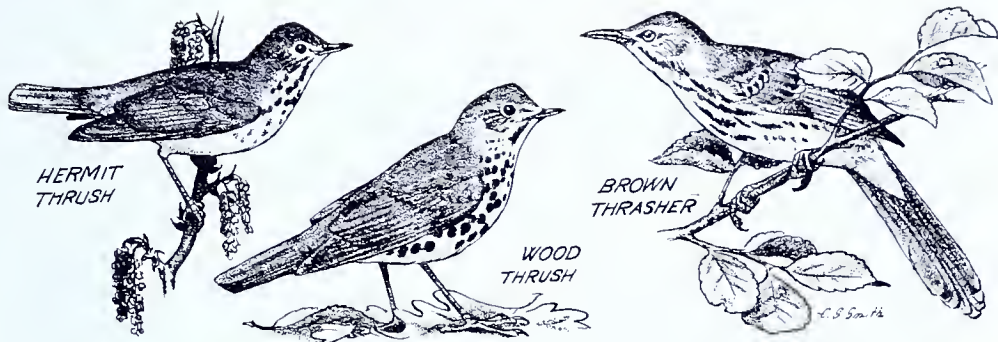
The first spring arrivals are observed in late April or early in May: April 22, 1941; May 2, 1940. Usually before mid-May it is very numerous. It is regularly seen in the fall until the latter part of September or the early part of October: October 12, 1940; October 4, 1945; October 2, 1941. On November 18, 1940, I observed an individual in a thicket near the Blair Bridge. Although a light snow had fallen, the bird appeared to be uninjured and in perfect physical condition.

Nests with eggs are often found before the end of May. Sutton found nests with complete sets of eggs, usually four in number, from May 23 onward. This corresponds to data gathered in recent years. On June 1, 1942, I found a nest which was built about four feet above the ground in a small hemlock tree on McNutt Knoll. It contained five eggs.

EASTERN BROWN THRASHER

***Toxostoma rufum rufum*
(Linnaeus)**

The Brown Thrasher is a rather uncommon summer resident. While it is recorded regularly throughout the summer seasons, it is never particularly numerous. A few are occasionally seen in thickets border-



ing upon the swamp areas; but it is most often observed in upland thickets, particularly in old fields which are grown up with hawthorns and crabapples, and along brushy fencerows in the farming districts.

It is first recorded in the spring during the latter part of April: April 14, 1944 (Shoemaker and Harrison); April 20, 1941, and April 21, 1946 (Grimm). In the fall they are seen until the latter part of September or early October. I observed one on October 4, 1941. Sutton states that Mr. Hunter observed it at Hartstown as late as October 10, 1923.

Nests with full sets of eggs have been found in this region between mid-May and the latter part of June. Sutton found a nest with fully fledged young, and a young bird just out of the nest on June 1, 1924, at the edge of the swamp just south of Shermansville.

EASTERN ROBIN

***Turdus migratorius migratorius* Linnaeus**

The Robin is an abundant migrant and summer resident, and an occasional, but irregular and uncommon, winter resident. They are seldom found in the woodlands during the breeding season; the majority of the birds then occurring along the country roadsides, along fencerows, in orchards, and about the habitations of man. Flocking is evident during the early part of July, and from then until late October flocks numbering anywhere from a few dozen to several hundred birds are often seen in the wooded areas. When the fruits of the wild black cherry are ripe, these trees are constantly visited by flocks of Robins.

Migrants regularly arrive in the region during the early part of March, usually before March 15, and by the end of the month the species is usually very common. Some birds often begin nest building before the close of the month and full sets of eggs have been found about mid-April or very shortly thereafter. Young Robins are frequently seen in some numbers by mid-May.

Most females regularly seem to rear two broods of young. Nests with either eggs or young birds are found throughout the month of June, and many are seen during the month of July. On July 17, 1940, a female which nested at the Pymatuning Museum was incubating a set of eggs, which, according to Mr. Oudette, was her third set that season. Both previous broods had been brought off successfully.

Robins are seen occasionally throughout the winter months, but they are never common during the winter season. On January 28, 1946, I saw an individual in the swamp not far from Hartstown; and on February 20, 1947, six were seen in the swamp near the Blair Bridge.

WOOD THRUSH

***Hylocichla mustelina* (Gmelin)**

Sutton considered the Wood Thrush to be "a common migrant and summer resident in the deep woodlands of the higher country, but not nearly so common as the Wilson's Thrush in the Swamp". In 1940 and 1941 we considered the Wood Thrush to be rather uncommon in the woodlands about the Pymatuning Lake. It was only found regularly in a tract of beech-maple woods along the south side of the Upper Lake, while the Veery, or Wilson's Thrush, was common in all of the mixed hemlock and hardwood tracts about the lake. More recently, however, the Wood Thrush has occupied a good bit of new territory; and in 1946 and 1947 we found it practically everywhere about the lake. On the other hand, the number of breeding pairs of the Veery has progressively diminished. It is now seldom found in many of the woodlands where it was common but a few years ago.

The first spring arrivals are usually seen in early May: May 2, 1922 (Sutton); May 7, 1941 (Grimm). Nests with full complements of four eggs were found between May 20 and June 5. Sutton found a nest on August 22, 1925, with young birds about fully fledged, indicating the second broods may sometimes be raised.

HERMIT THRUSH

***Hylocichla guttata faxoni* Bangs & Pennard**

The Hermit Thrush is a common migrant, both in the spring and fall; and has been known as a rare summer resident. In the spring, the first individuals are seen early in April: April 4, 1940; April 14, 1944. In late April and early May it is usually rather numerous. Members of the Pymatuning Group recorded it on May 17-18, 1947. The fall migration begins early in October and may continue well towards the end of the month, although the majority of the birds seem to pass through by mid-month.

The only breeding record that I am aware of is that obtained by Dr. L. E. Hicks. On June 15, 1932, he found a nest in the Ashtabula County, Ohio, portion of the old Swamp. He also reported having seen birds of this species on Hemlock Island, north of Espyville, on July 9, 1928, and on May 30, 1930 (Todd, 1940).

EASTERN VEERY

***Hylocichla fuscescens fuscescens* (Stephens)**

The Veery, or Wilson's Thrush, was formerly an abundant migrant and summer resident which was very largely confined to the mixed forests of hemlock and hardwoods in and about the Pymatuning

Swamp. Mr. Todd found it in abundance between 1895 and 1898, and he regarded it to be much more common than the Wood Thrush.

In 1940 and 1941, we found the Veery to be quite common about the Pymatuning Lake. Its song rang through practically all of the remnants of the dark hemlock forests. While it is still to be found in many of its old haunts, its numbers, within recent years, seem to have been progressively diminishing. It is now seldom heard in some of the wooded areas where it was common but a few years ago. On the other hand, the Wood Thrush has most certainly increased in numbers, more or less supplanting the Veery in many localities.

In the spring the Veery is first seen or heard about the first week of May: May 3, 1922 (Sutton); May 5, 1941, and May 8, 1940 (Grimm). Nests with full sets of four eggs are found in late May or early in June. Mr. Fricke found a nest with three eggs, in a woods just north of the Pymatuning Refuge, on May 25, 1942.

In the fall it is seldom seen after the middle of August but undoubtedly the birds stay for several weeks beyond that time. Sutton collected an adult male at Dollar Lake, Hartstown, on September 7, 1925, and observed individuals as late as September 22.

EASTERN OLIVE-BACKED THRUSH

***Hylocichla ustulata*
swainsoni (Tschudi)**

The Olive-backed Thrush is a common migrant, being somewhat more numerous in the fall than in the spring. It is not observed until the second week of May, the earliest date being May 9, 1940. Sutton stated that he found one which was in full song on June 1, 1924, near Stewart's Corners. On only one occasion did I hear the song of this bird. That was on May 10, 1940, in the woods along the west side of the Shenango Channel, and south of the Blair Bridge road. As a rule the birds are silent during the migration.

In the fall this thrush has been seen as early as September 7, 1925, at Dollar Lake, Hartstown (Sutton). Our records range between September 17 and 27, for the years between 1940 and 1947.

GRAY-CHEEKED THRUSH

***Hylocichla minima minima*
(Lafresnaye)**

Sutton said that the Gray-cheeked Thrush was "a fairly common migrant, never so abundant, or at least so often certainly identified, as the Olive-backed Thrush, but present at about the same time and in the same places as that species". He gave records for Hartstown, Shermansville, and Conneaut Lake ranging between May 14 (1922) and May 22 (1926). He took a male at Dollar Lake on May 17, 1922. It was recorded by members of the Pymatuning Group on May 17-18, 1947.

I have no recent records for the species in the fall. Sutton stated that one or two were observed on several days between September 8 and 22, 1925, in the vicinity of Crystal and Lower Lakes, near Hartstown.

EASTERN BLUEBIRD

***Sialia sialis sialis* (Linnaeus)**

The Bluebird is a common migrant and summer resident. It occasionally, although rarely, occurs in the present region during the winter months. Sutton said that they were found in the "deep swamp" as well as in the outlying farming districts. I presume that he meant those sparsely wooded swamp areas, or semi-marsh areas, such as occur so extensively along the Shenango River channel between the Blair Bridge and Hartstown. In such places the Bluebird is indeed common, but it is never found in the heavily forested parts of the swamp. It is common everywhere throughout the farming regions.

The first spring arrivals are usually seen during the early part of March: March 3, 1946; March 9, 1940. By the end of that month it is generally quite common. In late September, and throughout October, small flocks of Bluebirds are often seen. I observed one such flock on November 13, 1941, southwest of Shermansville, but have not seen any birds later than that date. Sutton stated that Mr. Hutchens saw wintering individuals on February 5, 1925, and on the following February 20, Sutton himself observed two individuals in the region. Mr. Kirkpatrick had several winter records for the Meadville region.

Nesting generally commenced shortly after mid-April. Sutton collected a set of five eggs from a nest at Crystal Lake, Hartstown, on May 1, 1922.

BLUE-GRAY GNATCATCHER

***Polioptila caerulea caerulea*
(Linnaeus)**

The Blue-gray Gnatcatcher is apparently a rather rare summer resident for which Sutton had but one record: a bird which was seen at Crystal Lake, Hartstown, on May 20, 1922. On May 7, 1940, Mr. R. L. Fricke collected a male in the woods near Blair Bridge. On May 29, 1940, he and I observed an apparently mated pair in a tract of woods on the southern side of the Pymatuning Refuge. On April 29, 1941, I observed another individual in the same locality; and on July 25, 1941, I saw one at the eastern end of Ford Island. In May, 1947, I observed several birds in the oak woods on Ford Island. Although I found no nest, I am reasonably sure that the species nested there. Members of the Pymatuning Group recorded it in the present region on May 3-4, 1941; May 9-10, 1942; May 11, 1946; and on May 17-18, 1947. Sutton stated that Mr. Kirkpatrick observed a pair building a nest at Meadville on May 23, 1908, and collected it and the five eggs on July 4. There is reason to believe that this species is gradually increasing in numbers in the present region.

EASTERN GOLDEN-CROWNED KINGLET

***Regulus satrapa*
satrapa Lichtenstein**

The Golden-crowned Kinglet is a tolerably common migrant and winter resident. It is usually most numerous during late March and early April in the spring, and again in October during the fall. Sutton considered it to be an abundant winter resident "at which time", he said, "it is one of the characteristic birds of the swamp". Although it is frequently recorded during the winters of recent years, it is never so numerous that it could be termed abundant. It is certainly never so common as the Black-capped Chickadee, the Slate-colored Junco, or the Tree Sparrow.

In the fall the first individuals are seen in October: October 5, 1945; October 10, 1941; October 18, 1940. In the spring it is never seen later than the last week of April: April 24, 1941 (Grimm); April 29, 1922 (Sutton).

EASTERN RUBY-CROWNED KINGLET

***Regulus calendula*
calendula (Linnaeus)**

The Ruby-crowned Kinglet is a very common spring and fall transient. In the spring the first individuals are seen about mid-April: April 14, 1944 (Shoemaker); April 17, 1941, and April 21, 1946 (Grimm). It is sometimes seen as late as mid-May: May 14, 1940 (Grimm); May 13, 1922 (Sutton); May 15, 1926 (Langdon). During the spring migration the male birds are frequently heard singing.

In the fall the first individuals are observed during the latter part of September or the first week in October: September 22, 1925 (Sutton); September 24, 1941 (Grimm); October 4, 1940 (Shoemaker). The last individuals are usually seen about mid-October.

AMERICAN PIPIT

***Anthus spinoletta rubescens* (Tunstall)**

The American Pipit is a fairly regular transient, but the number of birds which were seen varied considerably from year to year, during some seasons it was quite common while in others it was relatively scarce. It is usually more common in the fall than during the spring season. Sutton considered the species as a rather uncommon migrant.

In the spring, Pipits have been seen between May 6 (1945) and May 22 (1940). Mr. R. L. Fricke collected one along the old railroad embankment near the Linesville spillway on May 21, 1940. The following day we observed five birds in a plowed field on Ford Island. On May 6, 1945, I saw a flock of about twenty in a plowed field a short distance southwest of Shermansville.

In the fall the species is recorded between September 24 (1941) and October 28 (1940). Flocks of from twenty to fifty individuals are not infrequent during fall migrations. These birds seemed to have been

particularly numerous during the fall of 1940. On October 1, I saw a flock of about twenty near the Ohio end of the Espyville-Andover causeway; on October 11, a flock of about thirty in a plowed field north-east of Espyville; and on October 28, a flock of about fifty were seen in a pasture field along the southern boundary of the Pymatuning Refuge. During the same year there were innumerable records of scattered individuals and of small flocks.

CEDAR WAXWING

Bombycilla cedrorum Vieillot

The Cedar Waxwing is an irregularly common permanent resident. Except during the breeding season these birds are occasionally seen in wandering flocks. At times they are very common, at others relatively scarce; but they are usually observed with a fair degree of regularity between May and late October.

During the winter months they are seen much less frequently than at other seasons. On January 17, 1940, I saw about a dozen birds feeding on the fruits of the winterberry (*Ilex verticillata*) along the edge of the swamp on the north side of the refuge area. On March 19, 1941, a flock of about twenty was observed on Ford Island. A flock of a half dozen birds was seen feeding on the fruits of a flowering crabapple tree at Ford Island, on February 1, 1946; and on February 8, a flock of twelve was seen in the swamp at the Blair Bridge.

Bluebird with tempting tidbit for hungry babies. Note open mouth of youngster at lower left edge of cavity.

Photo by Hal H. Harrison.



Nests with eggs or young birds have been found between mid-June and mid-September. Sutton observed two pairs which were building their nests in maple trees near Hartstown, on June 3, 1922. On June 17, 1923, he collected a nest with five fresh eggs at that locality. The species has often nested in shade trees in the town of Linesville, where parents occasionally have been seen feeding their broods in the nest during late August or early September.

NORTHERN SHRIKE ***Lanius excubitor borealis* (Vieillot)**

This species is apparently a very rare winter visitant for which I know of no recent records. Sutton stated that Mr. Kirkpatrick had specimens which were taken at Meadville on December 25, 1892; January 6, 1893; and January 21, 1891. It may reasonably be expected to occur occasionally in the present region during the winter months.

MIGRANT SHRIKE ***Lanius ludovicianus migrans* Palmer**

The Migrant Shrike is apparently a very uncommon, if not rare, migrant and summer resident. In the spring it has been observed occasionally during the early part of April. Sutton stated that Mr. Bergstrom secured a male specimen at Conneaut Lake on April 11, 1926. On April 4, 1941, I observed one a short distance south of Shermansville. Mr. C. B. Shoemaker recorded one on April 14, 1944.

I have seen birds of this species perched on wires in the countryside during the summer months, but they were never seen regularly or in any numbers. Sutton stated that they found a nest containing six fully fledged young ready to leave the nest on May 16, 1925, about three miles northwest of Hartstown; and that Mr. Bergstrom found a nest with four young in the same field on May 28, 1926. Mr. R. L. Fricke collected a set of eggs from a nest in a hawthorn tree, in a field just south of the Pymatuning Refuge on the Blair Bridge road, May 11, 1937.

EUROPEAN STARLING ***Sturnus vulgaris vulgaris* Linnaeus**

In 1928 Sutton stated that the Starling had become "almost as menacingly abundant in the Pymatuning region as it has in many sections of Pennsylvania to the eastward". "If", he added, "it continues to increase, as it has during the past six years, it is certain to cause trouble. It is not yet, however, to be reckoned with as a serious enemy of the native cavity-nesting birds". There is no doubt today that its increase has been steadily progressive; it is now almost excessively abundant, but there is an indication that the increase has recently leveled off. Today they are found everywhere in the region.

According to Sutton the first individuals of this species were seen at Shermansville on April 28, 1928. On May 31, 1923, he saw four birds flying over Hartstown. In the fall of 1925 they were seen

sparingly about Hartstown, but no pre-migratory flocking tendencies were observed. By 1926, however, Mr. Bergstrom saw flocks of a hundred associating with Grackles and Red-wings in the Pymatuning Swamp. Less than fifteen years later hordes of Starlings were seen each spring and fall. It breeds throughout the region, in town and country, and has become more or less of a serious nuisance about buildings. Flocks are seen regularly throughout the winter months as well as in other seasons throughout the year.

On May 27, 1942, I observed a pair of these birds carrying food to their young in a nest actually built in the eagle's nest on the Pymatuning Refuge. Another pair had taken over an old woodpecker's nest in the trunk of the tree hardly ten feet beneath the same eagle's nest. Mr. J. G. Crumb tells me that he knew of a Sparrow Hawk's nest which was destroyed by Starlings, which threw out the hawk's eggs and appropriated the opening in the side of a barn for their own use.

NORTHERN WHITE-EYED VIREO ***Vireo griseus noveboracensis*** (Gmelin)

Todd (1940) states that there are two records for this species in the Pymatuning region; "one for May 30 is late enough to suggest breeding (Seiple; Elliott)".

YELLOW-THROATED VIREO ***Vireo flavifrons* (Vieillot)**

The Yellow-throated Vireo is a tolerably common migrant and summer resident. It is regularly observed in the wooded areas during the summer months but is never as common as the Red-eyed Vireo. The two species often inhabit the same tract of woodland; the Yellow-throated Vireo frequenting the tops of the taller trees while the Red-eyed more commonly inhabits the understory of smaller trees.

In the spring this species apparently arrives a little before the Red-eyed Vireo, usually during the first few days of May: May 2, 1941, and May 2, 1948 (Grimm); May 2, 1922 (Sutton). Mr. Fricke found it to be fairly common in most of the wooded areas about the Pymatuning Lake in May, 1940. In the fall it has not been recorded later than mid-September.

We have little data on the nesting of this species. Sutton collected a nest with three eggs on May 26, 1922.

BLUE-HEADED VIREO ***Vireo solitarius solitarius* (Wilson)**

In recent years the Blue-headed Vireo has been recorded as a fairly common transient. Although Sutton considered it to be a rare summer resident, "which in former years may have been commoner", we have no recent records for this species in the summer months. It may have been common when the Canadian Zone aspect of the region was

still a dominant feature; but like many other typically Canadian Zone species, it no longer finds the habitat so suitable.

In the spring the Blue-headed Vireo has been recorded in late April or early in May: April 28, 1922 (Sutton); May 10, 1940 (Grimm). In the fall it occurs from mid-September until early in October. The latest date on which I have seen it was October 9, 1941, when I observed one in the swamp about a half mile north of Hartstown.

Sutton observed mated pairs north of Hartstown on May 31, 1924, and on June 18, 1923. He saw a pair near Linesville on July 2, 1927. Although he found no occupied nests of the species, he remarks that an old vireo nest, "apparently too large and deep for that of a Red-eye, was found at the tip of a hemlock bough, deep in the Swamp"; and he believed that it may have been a deserted nest of this bird.

PHILADELPHIA VIREO

Vireo philadelphicus (Cassin)

The Philadelphia Vireo is apparently a rather rare transient; but, as Sutton has remarked, it is probably much more common than our records show. Actual records for it are indeed meager, particularly during recent years.

Sutton recorded individuals at Hartstown from May 17 to 24, 1922; one near Shermansville, May 31, 1923; two at Lower Lake, Hartstown, May 31, 1924; and two at Crystal Lake, Hartstown, May 16, 1925. On May 20, 1940, Mr. Fricke and I observed one in a willow thicket along the northern border of the Pymatuning Refuge, a short distance east of Linesville. On May 18, 1947, he observed another one in practically the very same thicket.

Mrs. Red-eyed Vireo is neat and trim. Here she sits quietly alert on her eggs.

Photo by Lynwood M. Chase.



RED-EYED VIREO

Vireo olivaceus (Linnaeus)

The Red-eyed Vireo is an abundant migrant and common summer resident in most of the wooded tracts throughout the region. It is found more rarely in the deeper dense stands of hemlock than in other wooded areas but is common in sapling-sized second growth thickets.

The first individuals have been recorded during the early part of May: May 5, 1922 (Sutton); May 7, 1940, and May 7, 1941 (Grimm). In the fall it is regularly seen until the middle or latter part of September: September 14, 1946 (Shoemaker); September 16, 1940, and September 19, 1941 (Grimm); September 24, 1925 (Sutton). Sutton stated that Mr. Bergstrom had seen one at Shermansville as late as October 2, 1925.

Nests of this species are seldom found at heights greater than ten feet from the ground and are often built in small saplings in the under-story of the woods. Full sets of eggs are not usually found before June 1. Judging from the number of times adult birds were seen feeding young Cowbirds, it would seem that nests of this vireo are frequently parasitized. Sutton, however, found that only four of eighteen nests, examined in 1922 and 1923, contained eggs of the Cowbird. On July 1, 1927, he found a nest near Crystal Lake, Hartstown, which held three eggs of the Vireo and one of the Cowbird.

EASTERN WARBLING VIREO

Vireo gilvus gilvus (Vieillot)

The Warbling Vireo is a locally common summer resident. It is not a bird of the wooded areas; but it occurs in shade trees throughout the region, both in town and in the rural areas.

It arrives in the region during late April or early May: April 24, 1946, and May 1, 1941, at Ford Island (Grimm); May 2, 1922, at Hartstown (Sutton). On May 2, 1948, they seemed to be very numerous both in Linesville and at Ford Island. In the fall it is regularly observed until about mid-September: September 10, 1941 (Grimm); September 19, 1925 (Sutton).

Redstart and young.

Photo by A. A. Allen.



At least a half dozen pairs have been regularly present in the trees about the Pymatuning Museum on Ford Island during the breeding seasons. It is also very numerous in the town of Linesville. The nests are built high in the tree tops, and usually they are not very accessible. The full sets of eggs are probably completed about the end of May or early in June.

BLACK AND WHITE WARBLER *Mniotilta varia* (Linnaeus)

The Black and White Warbler is a tolerably common transient, and an occasional, but rare, summer resident. In the spring it has been recorded during late April and May: April 29, 1925, at Conneaut Lake (Sutton, *vide* Langdon); May 1, 1941, and May 2, 1940, at the Pymatuning Refuge (Grimm). An occasional bird was seen until May 20, during the spring of 1941. In the fall it has been seen from late August until mid-September: August 22, 1941 (Grimm); September 21, 1925 (Sutton).

Sutton observed a pair near Shermansville on June 1, 1924, which were doubtless nesting although he could not locate the nest. He states that Mr. Kirkpatrick had found them nesting at Meadville on two occasions; on June 4, 1910, he found a nest with four eggs, and on June 27, 1903, he found a nest with three young and an egg lying on the ground outside the nest.

PROTHONOTARY WARBLER *Prothonotaria citrea* (Boddaert)

The only record for this species in the Pymatuning region was made during the summer of 1949. On June 18 Messrs. John F. Mehner and James Ross discovered one in a beaver dam area in the swamp north of Hartstown. Willows were the dominant vegetation in this flooded tract. The bird sang the usual, characteristic, emphatic "tweet-tweet-tweet-tweet-tweet" song. It was seen on the same day by Dr. Dwight E. Sollberger and a group of his biology students from Indiana State Teachers' College. The male was observed again in the same area by Messrs. Mehner and Calvin on August 6.

WORM-EATING WARBLER *Helmitheros vermivorus* (Gmelin)

Sutton observed individuals of this species on May 12, 1922, and May 15, 1925. It appears to be a very rare straggler in the present region. I have not personally observed it nor do I know of any recent records.

GOLDEN-WINGED WARBLER *Vermivora chrysoptera* (Linnaeus)

The Golden-winged Warbler is evidently a very rare summer resident. Sutton found it nesting near Hartstown and in dead tamaracks west of Shermansville in 1922. He found single birds or pairs during several other years. A female was observed feeding young on June 30, 1927.

The only record within recent years appears to be the bird which was seen by Mr. R. L. Fricke on May 15, 1940.

BLUE-WINGED WARBLER

***Vermivora pinus* (Linnaeus)**

The Blue-winged Warbler is a rather common, but somewhat local, summer resident. Sutton states that Mr. Todd apparently did not find this bird during his visits to the Pymatuning in the years between 1895 and 1898. Writing of the species in the years immediately prior to 1928, Sutton said that "today it is unquestionably one of the most abundant, widely distributed, and characteristic members of its family in the region". It has, within recent years, been a common breeding species about the Pymatuning Lake and the swamp extending to Hartstown. I have also found it at the Jumbo Woods to the north, and it is known to occur along the Conneaut Lake Outlet.

Sutton observed that "its occurrence seems to depend quite definitely on a certain type of low bushy growth, which occurs along the borders of the swamp, particularly near the dying tamaracks and the margins of the lakes and streams". These habitat requirements seem to be met today about much of the shore of the Pymatuning Lake where many of the old field areas have grown up with brush and aspen thickets. Stands of small trees with an understory of shrubs seems to be the most optimum habitat for the species.

The Blue-winged Warbler arrives early in the month of May: May 2, 1948 (Grimm); May 3, 1941 (Shoemaker); May 3, 1922 (Sutton). It is generally rather common before mid-May. Sutton observed two pairs of birds building nests on May 17, 1922; and he found nests with young, or eggs about ready to hatch, on June 1 and 2. Todd (1940) states that he and Miss Trimble found a nest along Conneaut Lake Outlet, about two miles from Conneaut Lake, on May 25, 1934. It contained four eggs of the warbler and one of the Cowbird. Mr. Swoger found a nest with three newly hatched young, an addled egg, and a young cowbird on McNutt Knoll, June 8, 1944.

In the fall it has been regularly observed until about mid-September. Sutton observed it as late as September 19, 1922.

BREWSTER'S WARBLER *Vermivora leucobronchialis* (Brewster)

This hybrid of the Golden-winged and Blue-winged Warblers was recorded by Sutton. On August 29, 1925, he secured an adult male near Hartstown which was quite typical of this form. "It was singing the characteristic song of the Blue-winged Warbler". A nesting pair, both parents of which showed tendencies toward being typical of the present form, were found near Hartstown by Mr. Thomas on June 6, 1922. The nest held two young and three well incubated eggs when collected on that date.

LAWRENCE'S WARBLER

***Vermivora lawrencei* (Herrick)**

Mr. R. L. Fricke (1939) described the collecting of an adult male of this hybrid form about five miles south of Linesville on May 12, 1939. Mr. John Herron who accompanied Mr. Fricke described its song as resembling that of the Blue-winged Warbler.

TENNESSEE WARBLER

***Vermivora peregrina* (Wilson)**

Although Sutton considered this transient species as rare in the spring, but rather abundant in the fall, it has certainly been one of the most abundant of warblers during the spring migrations in recent years. About mid-May, particularly in 1946 and again in 1947, there was hardly a woodland or thicket which was not literally teeming with Tennessee Warblers. Often their songs practically drowned out the notes of other species of warblers.

The species seems to suddenly appear in numbers about mid-May. Sutton recorded two individuals at Hartstown on May 11, 1922. I first observed it on May 16 in 1941 and in 1946, and on May 17, in 1940. In the fall it was recorded on August 28, 1941. Sutton found it on September 5, 1925, near Crystal Lake, Hartstown, and he states that the birds were abundant between September 7 and 12, the last being seen on September 22. It has been quite common during fall migrations during every recent year.

ORANGE-CROWNED WARBLER *Vermivora celata celata* (Say)

The Orange-crowned Warbler is apparently a very rare transient. Sutton saw, and heard, two birds at Crystal and Lower Lakes, Hartstown, on May 12, 1922. He observed another at Lower Lake, September 19, 1925. On May 10, 1940, we observed one in a mixed company of warblers in a thicket on top of the hill, about a mile southwest of Blair Bridge. Mr. Fricke collected it.

NASHVILLE WARBLER

***Vermivora ruficapilla ruficapilla*
(Wilson)**

The Nashville Warbler is a common spring and fall transient and a rather rare summer resident. It arrives in the spring in early May: May 5, 1946; May 7, 1940. In the fall it was recorded as early as September 1, 1944, and as late as October 10, 1945.

Todd (1940) states that he took a male specimen on June 1, 1898, near Hartstown, and thus satisfied himself that the species was breeding in Pymatuning Swamp. Sutton saw one at Shermansville on June 1, 1923, and found two nesting pairs near Lower Lake, Hartstown, on June 29, 1927.

On May 26, 1942, Messrs. R. L. Fricke and Earl Davis found, and collected, a nest a short distance south of the Blair Bridge road and on the east side of the channel. It was located in a small red pine tree in a reforested field area which borders upon the swamp. The nest contained three eggs of the warbler and one of the Cowbird.

One was observed through the months of July and August 1949 near the Linesville spillway by Mr. John F. Mehner and others. Mr. Mehner and Robert Calvin saw one in low vegetation at Smith Marsh on September 4, 1949.

NORTHERN PARULA WARBLER

Parula americana pusilla
(Wilson)

Sutton considered the Parula Warbler as a fairly common spring transient and as a rare summer resident. I did not find it particularly common, although a few were seen during the spring migrations in the early part of May.

On June 3, 1922, Sutton observed a pair building a nest in a partially dead hemlock tree about three miles south of Linesville. He saw a mated pair near Shermansville on June 1, 1924, and another pair near Linesville on July 1, 1927. We have no recent breeding records for the species.

EASTERN YELLOW WARBLER

Dendroica petechia aestiva
(Gmelin)

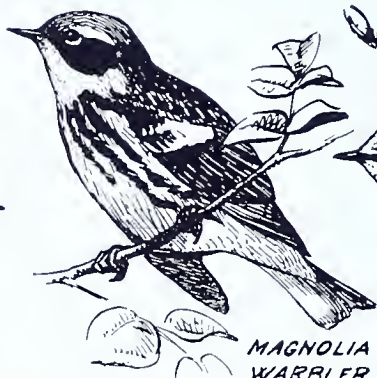
The Yellow Warbler is an abundant migrant and summer resident; by far the most common and most generally distributed species of warbler in the present region. During the breeding season they are found everywhere except in the heavily wooded areas. In the vast expanses of marsh and thicket of swamp shrubs, extending from the upper end of Pymatuning Lake to Hartstown, it is always one of the commonest and most characteristic breeding birds. They are equally as common in copses and thickets about the lake shore, and, for that matter, throughout the countryside. In excess of a dozen pairs nested every year on Ford Island alone.

This warbler is regularly observed during the latter part of April: April 18, 1941, and April 23, 1946 (Grimm); April 25, 1948 (Crumb). In the fall it is commonly seen until the latter part of August and a few are recorded regularly until about mid-September: September 10, 1941 (Grimm); September 14, 1946 (Shoemaker); September 21, 1925 (Sutton). On the latter date Sutton collected a female at Crystal Lake, Hartstown.

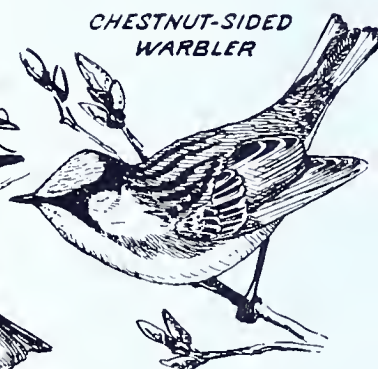
Nests are generally under construction by the second week in May and full sets of four or five eggs are found about May 20 during most



WILSON'S
WARBLER



MAGNOLIA
WARBLER



CHESTNUT-SIDED
WARBLER

seasons. On May 20, 1941, Mr. Hal H. Harrison and I examined several nests on Ford Island, one of which held an egg of the Cowbird. Sutton examined forty-three nests and found a Cowbird's egg in only one. He believed this to be due to the protection afforded by the presence of Red-winged Blackbirds, which, he states, "would not tolerate a Cowbird anywhere about the marshes".

MAGNOLIA WARBLER

***Dendroica magnolia* (Wilson)**

Sutton considered the Magnolia Warbler to be an abundant migrant and a fairly common summer resident. It is still common as a migrant, but as a summer resident in recent years it has been uncommon. A few pairs seem to breed regularly in the remnants of the hemlock swamp forest about Pymatuning Lake and between the Lake and Hartstown.

Early spring arrivals have been noted during the first week of May: May 2, 1922 (Sutton); May 3, 1941 (Thorp and Grimm). The peak of the spring migration usually occurs about May 8, and for four or five days they are generally quite numerous. In the fall, migrants probably reach this region during the latter part of August, and fairly large numbers are seen each year until mid-September or later. Members of the Pymatuning Group recorded it on September 30, 1945.

Sutton found mated pairs building nests on May 18, 1922. On May 13, 1935, Mr. R. L. Fricke observed a pair building a nest about forty feet from the ground in a hemlock tree in a woods west of Linesville. Sutton found a nest on May 20, 1922, about two miles south of Linesville, which he says was neatly set in the terminal portion of a low hemlock bough.

CAPE MAY WARBLER

***Dendroica tigrina* (Gmelin)**

Although Sutton considered the Cape May Warbler to be very rare as a rule during the spring migrations, we found it to be regular and not altogether uncommon as a spring migrant in recent years. It was also rather common during the fall migration.

In the spring it is usually first seen about mid-May: May 13, 1940; May 14, 1941. Most of the birds apparently pass through the region by May 20 for few are seen later than that date. In the fall it has been recorded between September 1 and 20. On September 1, 1925, Sutton collected an immature male near Hartstown, but few have been seen in recent years before September 10.

BLACK-THROATED BLUE WARBLER

***Dendroica caerulescens* *caerulescens* (Gmelin)**

The Black-throated Blue Warbler is a rather uncommon spring and fall transient. It is seen occasionally during the early part of May: May 9, 1940 (Grimm); May 10, 1941 (Herron); May 12, 1944

(Fricke). Sutton recorded it in the fall between September 11 and 24. I observed an adult male in hemlock woods near the Blair Bridge on September 30, 1941.

Sutton did not find this species breeding in the Pymatuning Swamp, and he attributed its absence as a breeding species to the absence of rhododendron in this region. However Todd (1940) says that Dr. L. E. Hicks found it on Hemlock Island during June, 1936; and that he found a nest in the Ohio portion of the swamp.

MYRTLE WARBLER *Dendroica coronata coronata* (Linnaeus)

The Myrtle Warbler is a common transient, perhaps somewhat more numerous in the fall than during the spring. It has not, as far as I know, ever been recorded here during the winter months.

In the spring this warbler often appears about mid-April or shortly thereafter: April 14, 1944 (Shoemaker); April 18, 1936 (Seiple); April 21, 1941 (Grimm). It is usually common the latter part of April and is often seen in fair numbers during the early part of May. I observed it as late as May 18, 1941; and Mr. Shoemaker saw one on May 21, 1943.

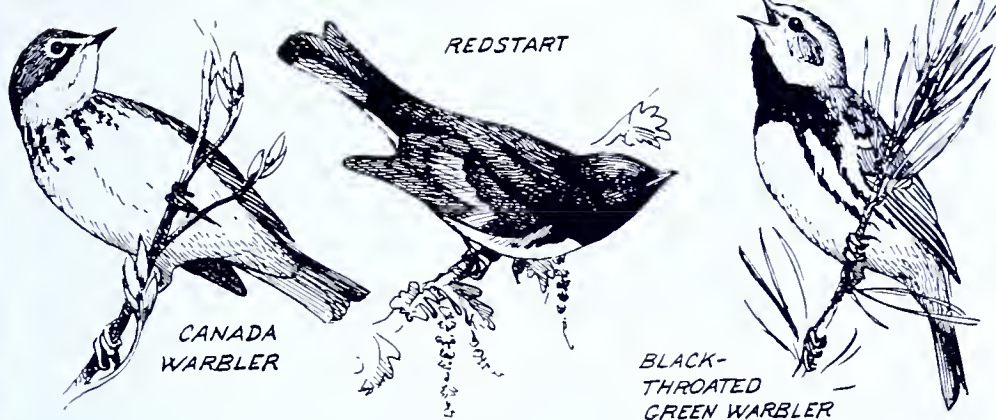
In the fall it is usually seen during the early part of September: September 1, 1944 (Shoemaker); September 10, 1941 (Grimm). By mid-September it is often rather numerous; and it has been recorded regularly until mid-October or later: October 19, 1940, and October 20, 1925 (Grimm). Sutton states that Mr. Bergstrom recorded it near Shermansville as late as October 24, 1925.

BLACK-THROATED GREEN WARBLER *Dendroica virens virens* (Gmelin)

The Black-throated Green Warbler is a common transient, and a local but fairly common summer resident. Wherever the hemlock forest still occurs a few of these warblers were usually found during the breeding season. It was found regularly in the scattered remnants of hemlock swamp forest about Pymatuning Lake and thence southward towards Hartstown.

The species arrives in the region during the latter part of April: April 19, 1941; April 21, 1946; April 29, 1940. In the fall it has been regularly recorded until the latter part of September. Sutton found them abundant at Hartstown between September 16 and 24, 1925. Mr. Shoemaker recorded it between September 22 and 28, 1941. I have seen them at McNutt Knoll on the northern side of the Pymatuning Refuge as late as October 2, 1945.

Undoubtedly this species was much more common in former years than it is today; for within the past two decades a considerable area of hemlock forest has been cleared off to make way for the lake, or cut for saw timber.



On May 27, 1922, Sutton found a nest about twenty-five feet from the ground in a small hemlock tree; but it contained no eggs when collected on June 2. He believed that the bird deserted it. He observed a female building on June 16, 1923. This nest was close to the main trunk and about sixty feet from the ground in a hemlock tree. Mr. Fricke found a completed nest on May 12, 1944. Mr. Swoger states that on the same date he observed a nearly finished nest on a pine branch at McNutt Knoll.

BLACKBURNIAN WARBLER *Dendroica fusca fusca* (Müller)

The Blackburnian Warbler is a rather common transient, and a rare and local summer resident. Sutton stated that it was "irregularly abundant both in spring and fall, but usually only moderately common".

It usually arrives in spring during the first week in May: May 2, 1922 (Sutton); May 3, 1941, and May 5, 1946 (Grimm). It is seen in greatest numbers between May 10 and May 20. In the fall the first migrants probably reach the region in late August, but the mass migration generally takes place somewhere between September 10 and 25. Sutton stated that Mr. Bergstrom had seen it as late in the fall as October 1, 1925, at Shermansville.

Sutton found several nesting pairs in hemlock woods north of Harts-town, and in dense woods south of Linesville, on June 29 and 30, and on July 1 and 2, 1927. He found a nest with half grown young on June 30. I have on rare occasions observed this bird in tracts of hemlock woods about the Pymatuning Refuge during the month of June. On June 19, 1941, I observed a female feeding a young Cowbird.

CERULEAN WARBLER *Dendroica cerulea* (Wilson)

Although Sutton stated that this species was a common summer resident which was restricted "to the deciduous woods of the uplands, particularly the beech groves, and never found in the swamp proper", it has not been recorded very often by observers in more recent years. I have never seen it except during the spring migration and then on a very few occasions. Possibly the fact that so many of the upland hardward tracts have been cut-over in the past decade or two may be responsible for our failure to find it.

In the spring Sutton observed the species on May 2, 1922, at Hartstown, and on May 10 he stated that it was "abundant". Mr. Fricke collected a male specimen southwest of Shermansville on May 14, 1940. On May 17, 1940, he and I observed an apparently mated pair in a beech-maple woods on the J. G. Crumb farm south of Pennline. Members of the Pymatuning Group recorded individuals on May 3-4, 1941, and on May 9-10, 1942.

CHESTNUT-SIDED WARBLER

***Dendroica pennsylvanica*
(Linnaeus)**

The Chestnut-sided Warbler, according to Sutton, was a common migrant but rather rare as a summer resident. In recent years it seems to have been a regular but uncommon transient. We have no recent breeding records for it.

In the spring migration it has been observed at varying dates between May 5 (1946) and May 15 (1941). Sutton found it nesting north of Hartstown in the latter part of May, 1922. A pair was seen building a nest about a mile north of Hartstown on May 13. On May 25 it held two eggs. The following day a Cowbird laid an egg in the nest and punctured one of the warbler eggs. A third egg of the warbler was thrown to the ground, and the parents deserted the nest. Altogether he estimated that five breeding pairs were present.

BAY-BREASTED WARBLER

***Dendroica castanea* (Wilson)**

The Bay-breasted Warbler is a tolerably common spring transient and is common in the fall. Spring records indicate that it arrives near mid-May: May 16, 1941, and May 19, 1940 (Grimm); May 16, 1925 (Sutton). It is seen regularly until very near the end of May; but Dr. Sutton recorded it on June 1, 1924; and Mr. Shoemaker recorded it on the same day in 1943.

In the fall I observed one as early as August 28, 1941, in the woods at the eastern end of Ford Island. On October 10 of that same year I saw one in that same locality. Usually it was quite common throughout most of the month of September.

BLACK-POLL WARBLER

***Dendroica striata* (Forster)**

The Black-poll Warbler is a common transient in the late spring and rather abundant in the fall. It does not appear in the spring until mid-May or thereafter, being the last of the warblers to arrive. Typical dates of arrival were as follows: May 16, 1946; May 18, 1940; May 20, 1941. Sutton observed one south of Linesville on June 1, 1924. Mr. Fricke saw one on Ford Island on July 10, 1946, which was undoubtedly a straggler or a non-breeding individual.

In the fall I have observed it on Ford Island in late August: August 27, 1941. It is usually seen in some numbers during the month of September, being commonest between September 10 and 25. I observed a few individuals as late as October 10, 1940. Sutton stated that Mr. Bergstrom saw them until the end of the first week of October, 1925.

NORTHERN PINE WARBLER *Dendroica pinus pinus* (Wilson)

Apparently there are but two records for the Pine Warbler in the present region. Sutton observed a singing male, in a clump of low pines growing in an open field near Shermansville, on April 29, 1922. Todd (1940) states that Hicks observed a male at Hemlock Island on June 12, 1931.

**WESTERN PALM WARBLER *Dendroica palmarum palmarum*
(Gmelin)**

Judging from the available records, the Western Palm Warbler seems to be rather uncommon both as a spring and as a fall transient. Sutton presented several spring records ranging between May 1 (1922) and May 16 (1925). It was seen by Mr. Bayard M. Christy on May 5, 1940. On May 9, of that same year, Mr. Fricke saw two birds along the old railroad right-of-way just west of the Pymatuning Refuge. He succeeded in collecting one of them.

Sutton's only fall records were for two individuals seen near Crystal Lake, Hartstown, on September 7-8, 1925. I observed an individual in a corn field on Ford Island on September 24, September 29, and on October 8, 1941. Another was seen near the northern boundary of the refuge, near Linesville, on October 11, 1941. On October 12, 1945, I saw one in a thicket on top of the hill about a half mile west of Blair Bridge.

**EASTERN OVEN-BIRD *Seiurus aurocapillus aurocapillus*
(Linnaeus)**

The Oven-bird is a very common migrant and a common summer resident, occurring in practically all of the wooded areas. It is found both in the swamp forests and in the woods of the uplands, being equally common in both types.

It arrives in the present region early in May: May 1, 1926 (Bergstrom); May 2, 1922 (Sutton); May 4, 1941, and May 5, 1946 (Grimm). The flight song of the males is commonly heard during the second week of May. In the fall they are commonly observed until mid-September or shortly thereafter. Apparently migrants from regions to the north reach the region during the early part of that month, for often at that time a marked increase is noted in the numbers seen. I observed it in the swamp woods near Blair Bridge on September 23, 1940.

Sutton found nests of this species, near Hartstown and Shermansville, which contained fresh eggs between May 16 and June 3, 1922. The extent to which Oven-bird nests are victimized by the Cowbird became evident when he found only one out of about six nests examined to be free of Cowbird's eggs. A nest which he found on May 16 contained only two eggs of the Oven-bird and four the Cowbird. The one nest which was not parasitized held five eggs of the Oven-bird.

GRINNELL'S WATER-THRUSH

Seiurus noveboracensis
notabilis Ridgway

The Grinnell's Water-thrush is a fairly common but local summer resident. It was undoubtedly much more common in former years than it is today, for the creation of the Pymatuning Lake eliminated a large part of the habitat of this species. Sutton said that it was "an abundant and characteristic migrant and summer resident, the occurrence of which definitely depends upon wooded swamp conditions, such as are found throughout the major part of the Pymatuning". He observed that the clearing of the land caused the birds to retreat at once and he stated that the humus extracting projects, which were in operation at that time about Hartstown, had caused a noticeable local decrease in the population. It has disappeared from several localities about the Pymatuning Lake since 1940 after the timber in those areas was removed. Mr. Todd found it common both near Hartstown and Linesville in 1895 and in 1898.

Since Sutton published his report on the bird life of the Pymatuning Swamp, it has been learned that the birds occurring in the present region belong to this western race of the Northern Water-thrush. According to Todd (1940) all of the specimens which have been collected are clearly referable to the subspecies *notabilis*.

In the swamp area between the Blair Bridge road and Hartstown this bird still occurs commonly as a summer resident. It is found in certain of the hemlock swamp areas in the Pymatuning Refuge, particularly between the old corduroy road and the Blair Bridge road. On May 2, 1948, I heard at least one male singing in the swamp at the edge of McNutt Knoll. It also occurs in some of the deeper swamps in the Jumbo Woods area to the north of the Pymatuning.

In the spring, the first individuals are regularly observed in late April: April 21, 1941 (Grimm); April 28, 1922 (Sutton). It is generally common in all of the favorable habitats during the first week in May, at which time the males are heard singing constantly. Sutton recorded it in the fall as late as September 21.

Sutton did not mention finding any nests of this bird but on May 23, 1922, he collected an incubating female; and on May 31, 1924, he observed a brood of young which were recently out of the nest. Todd (1940) mentions having flushed a female from her nest, "under the exposed roots of a tree in the midst of the swamp", on May 23, 1934.

LOUISIANA WATER-THRUSH

***Seiurus motacilla* (Vieillot)**

Sutton found this species on several streams in the present region, all of which were "swift-flowing, well-shaded rivulets": Randolph's Run, Jack's Run, Klink's Run, etc. He found a nest with five eggs, near Hartstown, on May 20, 1922, and one with young, about four days old, on May 24.

On May 7, 1941, Mr. Fricke and I observed a pair at a pool on McNutt Knoll; but the birds did not remain in this vicinity. Mr. Fricke first detected their presence by the song of the male bird, and we watched them at close range for some time. We have very few records for the species in recent years, but the streams mentioned by Dr. Sutton have scarcely been investigated by recent observers.

KENTUCKY WARBLER

***Oporornis formosus* (Wilson)**

There are, as far as I can ascertain, only two records for the Kentucky Warbler in the present region. It is apparently a rare straggler. To date there are no breeding records, or even any indications that the species even rarely breeds in the region. On May 16, 1941, Mr. Fricke and I observed a male in a tract of woodland about a mile west of Shermansville. Our attention was attracted by the persistent singing of the bird. On September 1, 1944, another bird was seen by Mr. C. B. Shoemaker.

CONNECTICUT WARBLER

***Oporornis agilis* (Wilson)**

Sutton gave two records for this species in the present region: an adult male which was seen at Crystal Lake, Hartstown, on May 18, 1922, and an immature bird which was seen at the Lower Lake on September 11, 1925. Mr. Todd (1940) states that he observed one in the Pymatuning Swamp, north of Hartstown, on May 22, 1933. It seems to be a rather rare migrant.

MOURNING WARBLER

***Oporornis philadelphia* (Wilson)**

The Mourning Warbler is apparently a rare migrant for which there are few actual records in the Pymatuning region. In the spring Sutton observed individuals on May 16, 1922, at Crystal Lake, Hartstown; and on May 17, 1925, at Shermansville. Mr. R. L. Fricke collected an adult male near the Blair Bridge on May 22, 1940. In the fall Sutton saw one on September 10, 1925, about two miles north of Hartstown; three, on September 11, 1925, one of which was an adult male; and on September 12, 1925, he collected an immature male.

NORTHERN YELLOW-THROAT* *Geothlypis trichas brachidactyla* (Swainson)

The Yellow-throat is a very common migrant and summer resident practically everywhere about the Pymatuning Lake. They are common



Photo by Hal H. Har

What that dainty nest of a Yellow Warbler in the rose bush does to an otherwise busy family is amazing.

and characteristic birds of the swamp thickets, and are frequently seen in thickets throughout the upland areas. Sutton stated that in the old Pymatuning Swamp they were "particularly abundant among the cat-tails, high grass, and rank weeds. Large numbers are still found in such growths in the marsh between the Blair Bridge and Hartstown.

In the spring it arrives early in May: May 2, 1948; May 3, 1941; May 7, 1940. Within a week or ten days after the first individuals are seen it becomes common everywhere. It has been recorded in the fall until late September or early October: October 4, 1940, and October 2, 1941 (Grimm); September 21, 1945, and September 24, 1943 (Shoemaker).

Nests with full sets of four eggs have been found at varying dates between May 20 and mid-June. Sutton found a nest near Shermansville on June 17, 1923, which contained three eggs of the Yellow-throat and one of the Cowbird. It is possible, as Sutton suggests, that nests found about mid-June may represent second sets for the season. On June 13, 1944, Mr. H. H. Harrison found a female with five young among skunk cabbage leaves.

YELLOW-BREASTED CHAT *Icteria virens virens* (Linnaeus)

Sutton considered the Yellow-breasted Chat as "a regular but uncommon summer resident, found only in the brush-grown uplands". Its status apparently has not changed during the intervening two decades for we have observed it to be very local and uncommon.

The birds very probably return to this region early in May although our records all pertain to individuals either seen or heard about mid-month: May 11, 1940, and May 17, 1941 (Grimm); May 16, 1922 (Sutton). Sutton found a nest near Hartstown on May 28, 1922, which contained one egg. On June 1 this nest with a set of five fresh eggs was collected. He observed nesting pairs near Hartstown, Atlantic, and Adamsville between 1923 and 1927.

On June 5, 1940, I heard a male singing in a brushy field along the eastern side of the Pymatuning Refuge, so I presume that the birds were nesting there. They were heard in several of the old field areas about the refuge in the spring of 1946 and 1947.

HOODED WARBLER *Wilsonia citrina* (Boddaert)

According to Sutton, the Hooded Warbler was "a common migrant and summer resident found in the deciduous woods particularly about beech trees, and only sparingly in the wooded swamp". Neither Mr. Fricke nor I have seen it anywhere in the present region, nor does it seem to have been observed by others in any of the recent years.

* Todd (1940) states that he is unable to see any difference in specimens from the northwestern part of the state and those from the southwestern counties. He has therefore considered all western Pennsylvania specimens as *Geothlypis trichas* (Linnaeus), the Maryland Yellow-throat.

Sutton stated that he collected a male on May 10, 1922, near Hartstown. On May 26 he observed three mated pairs, and on May 29 he found a nest which contained four fresh eggs and one of the Cowbird. This nest was located "at the surprising height of eighteen feet from the ground in a slender upright shoot growing out from the trunk of a large beech tree". Another partly completed nest was found in a beech sapling about five feet from the ground on May 30, 1923.

WILSON'S WARBLER

***Wilsonia pusilla pusilla* (Wilson)**

Wilson's Warbler appears to be a regular but uncommon transient. Although Sutton considered it as "rare in the spring and fairly common as a rule in the fall" our observations of it were all made in the spring migration.

Sutton stated that Mr. Bergstrom saw this species at Shermansville on May 12, 1926. On May 15, 1922, Sutton collected a male north of Hartstown. He observed a male and a female at Crystal Lake on May 17, 1923, and a male at Lower Lake, Hartstown, on May 23, 1922.

Mr. Fricke observed it on May 18, 1940; and on the following May 20 he and I saw several individuals near Linesville. On May 18, 1946, I observed a male in the shrubbery on the grounds of the Pymatuning Museum on Ford Island. Several individuals, of both sexes, were seen at the same locality on May 24, 1947.

Sutton gave fall records for the Hartstown area ranging between August 28 (1925) and September 22 (1925). He states that they were "quite common" between September 7 and 15, 1925.

CANADA WARBLER

***Wilsonia canadensis* (Linnaeus)**

Concerning the status of the Canada Warbler in the old Pymatuning Swamp, Sutton has said that it was "a fairly common migrant, which nests regularly but not abundantly at Pymatuning in the wilder, dense, upgrown portion of the Swamp". As a summer resident it is much less numerous today than it was two decades ago, but it still occurs in some of the deeper hemlock swamps of the region. Mr. Fricke and I found several mated pairs in such a swamp area adjoining the Pymatuning Refuge, about a mile northwest of Shermansville, during the latter part of May 1940. This tract was cut over the following year, and since that time I have not seen any of these warblers in the area. It was found in several of the tracts of swamp woods in the refuge area and between there and Hartstown. I have also seen it at the Jumbo Woods during late May, and am reasonably certain that it also nests at that locality.

In the spring it was never observed until near mid-May: May 11, 1940, being the earliest record. Sutton recorded it in the fall as late as September 12, 1925, near Hartstown.

REDSTART

***Setophaga ruticilla* (Linnaeus)**

The Redstart is a common transient and summer resident, principally in the deciduous woodlands surrounding the swamp and Pymatuning Lake. They are regularly common in several of the wooded areas of the Pymatuning Refuge, including the oak woods on the eastern end of Ford Island.

The first individuals are seen in the spring during the early part of May: May 1, 1941, and May 5, 1945 (Grimm); May 3, 1922 (Sutton). In the fall it is regularly observed until shortly after mid-September, and it is usually common from late August until near mid-September. Sutton stated that the height of the fall migration in 1925 apparently occurred about September 11.

Sutton gave nesting data on twenty-seven nests which he examined between 1922 and 1924. Nests were either ready for the eggs or contained fresh sets of eggs in late May or early June. He found complete sets of eggs in some nests by June 1 and young birds by June 14. Sets of eggs usually numbered four; but four nests with five eggs or young were found. The majority of the nests were built between six and twelve feet from the ground. He found no eggs of the Cowbird in any of the nests.

ENGLISH SPARROW *Passer domesticus domesticus* (Linnaeus)

English Sparrows were common permanent residents about human habitations, both in the town and in the rural areas, but they were seldom seen very far afield. Sutton stated that they were not to be considered as an enemy of the bird-life of the Swamp, but that certain species of birds of the surrounding territory were "sadly victimized". He remarked that the Cliff Swallow was the species which seemed to suffer most, and the disappearance of these swallows was attributed mainly to the pugnacity of this species which drove the birds out and appropriated their nests for their own use.

English Sparrows were found breeding from mid-April until mid-summer, utilizing any crevice, cranny, bird house, or natural cavity at hand. Within the past two decades, however, the numbers of these birds has materially declined, particularly in the towns.

BOBOLINK

***Dolichonyx oryzivorus* (Linnaeus)**

The Bobolink is a rather abundant transient and a fairly common summer resident in meadowlands throughout the region. During the breeding season they are seen regularly in the meadows about Pymatuning Lake and elsewhere, and in the fall migrations flocks regularly frequent the regional marsh areas where they roost at night.

The first arrivals in spring are seen in late April or early May: April 29, 1940 (Grimm); May 3, 1941 (Shoemaker); May 4, 1922 (Sutton). Invariably the first flocks to arrive are comprised only of male birds, followed in about a week by flocks of both sexes. Generally by May 10



Young meadowlark in nest.

Photo by Hal H. Harris

they are quite common in all of the favorable habitat areas. Flocking tendencies were noted, both by Sutton and myself, during the early part of August, at which time the male birds were undergoing the postnuptial molt. At this season large numbers of these birds would gather at evening in the marsh areas. About mid-August they are often abundant; most of the birds being migrants from regions to the north. They are seen regularly until the latter part of September or early October: September 24, 1943 (Shoemaker); October 10, 1925 (Bergstrom).

Nests are sometimes found during the latter part of May, but the majority of the records pertain to the month of June. Five eggs usually comprised the set. Sutton collected a nest with five fresh eggs, in an alfalfa field west of Hartstown, on June 1, 1922. On June 13, 1944, Mr. H. H. Harrison found a nest. The young birds left it as he approached.

EASTERN MEADOWLARK *Sturnella magna magna* (Linnaeus)

The Eastern Meadowlark is a very common transient and a common summer resident. It occurs irregularly and uncommonly during the winter seasons. It is a common breeding species in meadowlands and fields throughout the region. Sutton stated that Mr. Kirkpatrick believed that the species was much more numerous forty years prior to 1928 than it was at that time. Farm abandonment since 1928 has still further decreased the total amount of optimum habitat for this and

other field nesting birds, so it is only logical to assume that the species was more common twenty years ago than it is today.

In the spring the first migrants often reach this region in early or mid-March; but in some years they are not seen until later in the month: March 4, 1946 (Grimm); March 18, 1940 (Oudette); March 24, 1941 (Grimm); March 26, 1943 (Shoemaker). Usually by the early part of April it becomes quite common. In the fall it has been recorded regularly until between mid-October and the end of the month. It is often very numerous during the early part of October. I observed one on November 22 and December 6, 1940, in a meadow at the Blair Farm, south of the Pymatuning Refuge. One was seen there again on February 27, 1941. These records undoubtedly pertain to a wintering individual, for never more than one bird was seen.

Nests of the Meadowlark have been recorded in May and June. Sutton collected a nest with five fresh eggs on May 11, 1922, at Hartstown.

WESTERN MEADOWLARK

***Sturnella neglecta* Audubon**

Mr. H. H. Elliott (1936) gave the following account of his observation of a bird of this species in the present region: "On June 9, 1935, in a meadow by the roadside just south of Hartstown, Mr. Reiter and I came upon a Western Meadowlark, *Sturnella neglecta* Audubon. It was my first encounter with the species, and I was at the time puzzled that a bird of the appearance of the meadowlark should be singing a song so strange and beautiful. It seemed to stand out from the familiar songs about us. The notes were loud, clear, flute-like, and the performance more voluminous than that of our familiar bird. We stopped and watched for some time, and, noting that the bird was occupied in carrying food and in singing, we inferred that it was one of a nesting pair. The *chuck* note also that it uttered in flight was unlike any note of the eastern bird". Mr. Todd (1940) has given the observation credence by including the species in his work on the "Birds of Western Pennsylvania".

YELLOW-HEADED BLACKBIRD

***Xanthocephalus xanthocephalus* (Bonaparte)**

Dr. L. E. Hicks has provided the only sight record for this species in the present region. He has reported having seen two individuals with Rusty Blackbirds, at the Pymatuning Reservoir, Ashtabula County, Ohio, on April 5, 1937 (Hicks, 1945a).

EASTERN RED-WING

***Agelaius phoeniceus phoeniceus* (Linnaeus)**

The Eastern Red-wing is an abundant transient and summer resident. It is one of the most common birds in the present region. There is hardly a marshy area, large or small, that does not have its full quota of breeding Red-wings.

The first spring arrivals reach the region early in the month of March: March 8, 1925 (Bergstrom); March 10, 1946 (Shoemaker); March 14, 1941 (Oudette). Mr. R. M. Sickles and I observed a male in the marsh north of Hartstown on February 27, 1946. It was accompanied by a male Rusty Blackbird. Generally by the latter part of March it is quite numerous. The first flocks and individuals which are seen in the spring were invariably males. The first females are never observed until a week or two after the male birds first appeared. In 1941, the first females were not seen until March 27.

Sutton found considerable overlapping of dates for the events in the nesting of this species. Completed nests ready for the first set of eggs were found between April 27 and May 6; first sets of fresh eggs were found between May 1 and 17; newly hatched young were found between May 4 and 16; and fully fledged young of the first brood were found on May 15. Incompleted or nearly finished nests for the second brood were found between May 25 and June 18. A nest with three small young which was found on August 21, 1925, he thought may have represented a third brood. On May 20, 1941, Mr. Fricke and I examined a number of nests, some of which were empty while others held from one to four eggs. I found well developed young in a nest near the Linesville spillway on June 3, 1941. On August 20, 1949, Mr. John F. Mehner found a nest in the refuge area which contained two young which were about two days old.

About mid-August large flocks of these blackbirds are always seen; and they often descend upon fields of corn, doing considerable damage to the ears in the "milk stage". At times the damage done to corn on Ford Island was really severe. Often at least half of the ears would be pecked at, the birds stripping back the husks at the tips of the ears

Baltimore Oriole at nest.

Photo by Hal H. Harris



to get at the kernels. Mixed flocks of Red-wings, Starlings, Cowbirds, and sometimes Rusty Blackbirds are frequently seen in pasture fields in the fall, commonly so until the latter part of October or early November. On November 29, 1941, and on December 5, 1939, I observed lone male Red-wings in the cornfields on Ford Island.

ORCHARD ORIOLE

***Icterus spurius* (Linnaeus)**

The Orchard Oriole is a rather rare transient and summer resident. Sutton gave the following records for it in the region: May 4, 1925, at Shermansville (Bergstrom); August 22, 1925, at Hartstown (Sutton); a pair seen on May 20 and 28, and throughout the month of June, 1926, at Conneaut Lake (Langdon); and a male seen near Espyville on July 1, 1927 (Sutton).

On May 23, 1940, Mr. Fricke and I discovered a mated pair in an old orchard near the shore of the lake, about a mile and a half west of Linesville. Both birds were collected, but we were unable to find any trace of the nest. On May 12, 1942, Mr. Fricke found a pair building a nest near the museum on Ford Island. Mr. Fricke also found them nesting there again in 1944. On May 12, 1946, they were seen near the museum; and a pair was seen about one and a half miles west of Linesville by members of the Pymatuning Group. Mr. C. B. Shoemaker observed them again at the latter locality on May 1, 1948. It appears that the species nests regularly but rarely in the region.

BALTIMORE ORIOLE

***Icterus galbula* (Linnaeus)**

The Baltimore Oriole is a rather common transient and summer resident throughout the region, nesting frequently in the larger trees along roadsides, fencerows, and the borders of the lakes and marshes, but not in extensively wooded habitat. They very commonly, but not exclusively, build their nests in the large elm trees which are numerous in the present region.

In the spring the first individuals are usually seen in early May: May 2, 1948; May 3, 1922 (Sutton); May 4, 1941. Mr. R. M. Sickles told me that he saw a male near the Pymatuning Museum on April 22, 1946. In the fall it is seldom observed later than the end of August. The latest date on which I have seen it in the fall was on September 4, 1943. On August 10, 1940, I observed one feeding upon the berries of the mountain holly (*Nemopanthis*) at the edge of the swamp near Blair Bridge.

By mid-May the birds are usually very busy with nest building. During the last week of May, 1940, I observed a female building in an oak tree at the eastern end of Ford Island. It was still under construction on June 1. Several times I saw this bird gathering the fibers from the old stalks of the swamp milkweed and the down from old cattail heads on one of the nearby floating bog islands. Sutton found small young in two nests on May 29, 1923.

RUSTY BLACKBIRD

***Euphagus carolinus* (Müller)**

Sutton described the Rusty Blackbird as "a fairly regular transient visitant, sometimes abundant, particularly at Pymatuning Swamp, where it gathers in great flocks among the alders". In recent years it has been a regular and usually a fairly common migrant, but it was never observed in exceedingly large numbers.

The first individuals were usually seen in late March or early April: March 26, 1943 (Shoemaker); March 27, 1941 (Grimm); March 27, 1926 (Sutton); April 4, 1940 (Grimm). On the latter date I found them present in considerable numbers. On February 27, 1946, Mr. R. M. Sickles and I observed a lone male and a male Red-wing in a springy area in the swamp north of Hartstown. Flocks of these blackbirds were commonly seen during the month of April, and a few were often seen until about mid-May. On May 10, 1940, Mr. Fricke and I observed a small flock along the lake near Linesville. Sutton observed a large flock passing through the Hartstown area on May 13, 1922.

In the fall Sutton stated that he observed the first migrants on September 22, 1925. Mr. C. B. Shoemaker recorded the species on September 23, 1941. Flocks of varying sizes are often seen during the month of October. On November 14, 1941, I saw a flock of several hundred Rusty Blackbirds and Cowbirds in a field south of Shermansville.

BRONZED GRACKLE

***Quiscalus quiscula versicolor* (Vieillot)**

The Bronzed Grackle is a fairly common, and occasionally abundant transient, and a fairly common but local summer resident. I am told by Mr. J. G. Crumb that years ago they often occurred in enormous numbers and were regularly very common migrants. In his opinion they now seem very scarce in the region.

In the spring the first individuals or small flocks are seen early in March: March 3, 1946; March 15, 1941. They are often fairly numerous in some localities in late March and early in April. In the fall season pre-migratory flocking is observed rather early in August; but I regularly saw the largest flocks during the month of October, which month, I believe, marks the height of the southward migration. Flocks of from one hundred to five hundred birds are not particularly uncommon. On October 28, 1940, I watched a flock leaving the woods on the south side of the Pymatuning Refuge. I estimated that there were between four and five hundred birds in that aggregation. I still observed a few individuals about on November 7, 1940. Sutton observed one near Hartstown on February 18, 1925, which was eating frozen apples.

Sutton found these birds nesting in the steel structure-work of a bridge over a tributary of the Shenango River near Espyville, on May 4, 1922. The full sets of eggs were partially incubated, and one set of five was at the point of hatching. On May 15, 1925, he found two nests with full sets of eggs in a marsh at the head of Conneaut Lake.

These exceedingly unusual nests were built among the cattails and were placed less than a foot above the water. The most favorite nesting sites of these birds are the large pines and Norway spruces which are found about many of the older farm houses. On May 30, 1940, I observed a number of pairs nesting in the large Norway spruce trees in the Linesville Cemetery. The clamor of young birds in the nests was plainly audible in the trees beneath which Memorial Day services were being conducted.

EASTERN COWBIRD

***Molothrus ater ater* (Boddaert)**

The Cowbird is a common, and sometimes quite abundant, transient and a fairly common summer resident. Sutton said that it was usually very rare in the Pymatuning Swamp because the Red-wings did not tolerate its presence.

In the spring the first Cowbirds are usually seen during the latter part of March: March 20, 1945, and March 20, 1941; March 26, 1943 (Shoemaker). Mr. Shoemaker recorded it as early as March 10, 1946. Usually by mid-April numbers of these birds are seen throughout the countryside. In the fall they are often seen in mixed flocks of blackbirds, although they sometimes flocked by themselves. On September 19, 1940, I observed a flock of about a hundred Cowbirds near Espyville. On November 14, 1941, I saw a mixed flock of Cowbirds and Rusty Blackbirds in a field south of Shermansville.

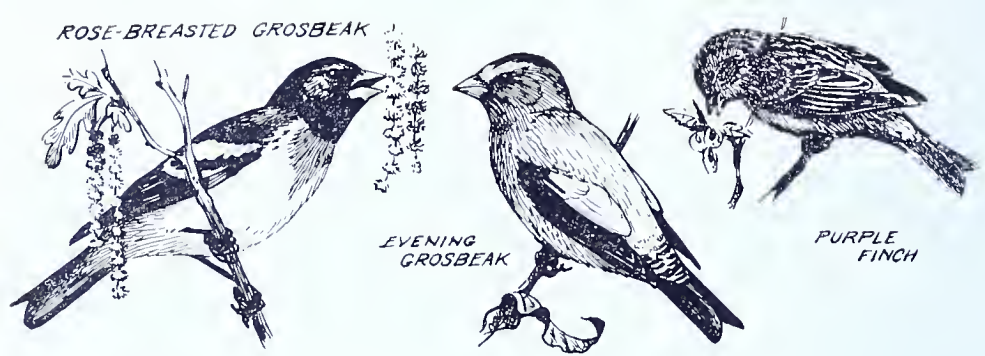
Sutton listed the following species as victims, in the order of the frequency in which he found Cowbird's eggs or young in their nests: Song Sparrow, Yellow Warbler, Red-eyed Vireo, Oven-bird, Towhee, Phoebe, Chipping Sparrow, Field Sparrow, Scarlet Tanager, Cardinal, Chestnut-sided Warbler, Hooded Warbler, and Tufted Titmouse. On May 23, 1940, Mr. Fricke and I found a nest of a Swamp Sparrow with three eggs of the sparrow and one of the Cowbird. On June 19, 1944, I observed a female Blackburnian Warbler feeding a young cowbird.

SCARLET TANAGER

***Piranga olivacea* (Gmelin)**

The Scarlet Tanager is a fairly common transient and summer resident, present during the breeding season in both the swamp and the upland woods. It generally arrives early in May: May 3, 1941; May 5, 1946; May 7, 1940. In the fall the birds are quiet and rather inconspicuous but they have been recorded regularly until the latter part of September: September 20, 1941 (Grimm); September 24, 1925 (Sutton). A male bird which Sutton collected on August 22, 1925, had almost completely assumed the green postnuptial plumage; and one collected on August 25 was about half completed with the molt.

Sutton found an incompleated nest on May 11, 1922, on Cherry Island, south of Hartstown; nests with sets of four eggs on June 1, 1923, at Hartstown, and on May 30, 1923, near Linesville. Mr. Fricke observed a nesting pair at McNutt Knoll on May 24, 1942.



EASTERN CARDINAL

***Richmondia cardinalis cardinalis* (Linnaeus)**

Sutton stated that Mr. Kirkpatrick first observed the Cardinal at Meadville on December 25, 1884, which apparently is the earliest record for it in this section of the state. They were not seen there in any numbers until 1897, when several pairs were observed. Mr. J. G. Crumb tells me that he never saw it about the Pymatuning region until the winter of 1917 when he observed it at his home south of Pennline. Sutton said that between 1922 and 1925 he found them to be quite common in certain areas, particularly in hawthorn-covered fields three miles north of Hartstown. He estimated that the local population about doubled between the years 1922 and 1924.

Today the Cardinal is a common and generally distributed permanent resident. It is very common throughout the farming sections and about the towns, but it also occurs throughout the swamp country. I have repeatedly, of recent years, found them in the wooded areas about the Pymatuning Lake, even in the tracts of hemlock swamp forest. No other species of southern affinity, unless it be the Tufted Titmouse, has been so markedly successful in extending its range into the present region.

Records for nests with full sets of eggs, three or four in number, range between May 12 and about mid-June. It seems very probable that two broods are usually raised during a season.

ROSE-BREASTED GROSBEAK *Pheucticus ludovicianus* (Linnaeus)

In recent years, the Rose-breasted Grosbeak has been a regular but rather uncommon migrant and summer resident. Sutton states that he found it to be rare about two decades ago but that Mr. Todd found it to be common about Linesville and Hartstown in 1895 and 1898. Mr. J. G. Crumb tells me that it was formerly quite numerous in the Pymatuning region, but that he has seen very few within recent years. Mr. Kirkpatrick, according to Sutton, stated that it was abundant in suitable localities about Meadville from 1875 to 1885. Mr. Kirkpatrick's explanation of the cause of this bird's decrease in numbers, as given in Sutton's report, certainly falls short of credibility. Such a widespread and prolonged decrease could certainly not have been merely due to taking them for cagebirds, particularly when the population has remained at a very much lower level long after such practices were forbidden by law.

In the spring the species is first observed in early May: May 6, 1940 (Grimm); May 6, 1941 (Crumb). It is most often observed about mid-May in the wooded areas about the Pymatuning Refuge and the Blair Bridge. It is seen very infrequently during the summer months. Sutton observed it in the fall on September 24, 1925. On October 16, 1940, I found a female along the road near the Blair Bridge which had only recently been killed.

Sutton found a nest with four eggs on Cherry Island, south of Hartstown, on May 23, 1922, and another with four small young in the swamp north of Hartstown on June 16, 1923.

INDIGO BUNTING

***Passerina cyanea* (Linnaeus)**

The Indigo Bunting is a fairly common summer resident, occurring in all of the thickets and woods borders about the Pymatuning Lake and the surrounding countryside. It is very rarely seen in the swamp areas but is rather common in thickets bordering upon them.

In the spring it is usually first recorded during the second week in May: May 11, 1922 (Sutton); May 11, 1941 (Herron); May 12, 1946 (Pymatuning Group); May 14, 1940 (Grimm). In the fall it is regularly observed until after the middle of September. Sutton observed several birds at Hartstown on September 23, 1925; and he believed that they probably remained considerably later.

Nests with full sets of four eggs have been found during the latter part of May. Sutton collected a set of four near Stewart's Corners on May 29, 1922.

EASTERN EVENING GROSBEAK

***Hesperiphona vespertina* *vespertina* (Cooper)**

The Evening Grosbeak is an erratic wanderer which occasionally reaches the present region during the winter months, when it moves eastward or southward from its usual range. Sutton stated that Mr. Bergstrom took a female specimen about three miles north of Hartstown on March 8, 1926. He also gave a record (*vide* Kirkpatrick) for the Meadville region in March 1890; and he cited a specimen as having been taken by Mr. Sennett at Meadville on July 21, 1910. Todd (1940) states that the collector actually was Mr. Kirkpatrick.

I have seen this species only during the winter of 1945-46, and I know of no other years during which it has been recorded by other observers. On January 1, 1946, Mr. W. W. Guiney and I observed a flock of about twenty-five birds along the Shermansville-Hartstown road in the vicinity of the Bate's School. They were seen about a group of large sugar maple trees. Most of them were apparently searching for seeds among the grass beneath the trees. About one-third of the flock seemed to be full-plumaged males and the rest were either females or im-

matures. On January 14, a flock of about the same size was observed in maple trees on the grounds of the Linesville school by my wife. Mr. R. M. Sickles again saw a flock near the Bates School on January 17. I saw a flock of about twenty-five birds again on February 26, this time on South Mercer Street in Linesville. The same day Mr. C. A. Bergstrom told me he saw three individuals at Shermansville. It seems very probable that there were other flocks in the region. On March 17, I observed a male and a female on McNutt Knoll in the Pymatuning Refuge.

PURPLE FINCH

***Carpodacus purpureus purpureus* (Gmelin)**

The Purple Finch is an irregularly common transient and winter resident, but usually a decidedly uncommon summer resident. It is a very erratic species at any season of the year, both in its occurrences and in numbers. It has most often been observed during April and May.

On April 17, 1941, I observed a male on McNutt Knoll which was singing brilliantly; and on April 19 I saw several birds at that locality. It has been recorded a number of times during the month of May in various years. A singing male which was observed in one of the red pine plantings on the north side of the Pymatuning Refuge, May 25, 1947, led Mr. Fricke and I to suspect that a pair was nesting in the vicinity. On several other occasions we observed these birds in the vicinity of such pine plantations. I saw them a number of times between June 9 and 15, 1943. On May 16, 1925, Sutton found a pair building a nest in a high, thinly-leaved tamarack, two miles from Linesville. Mr. J. G. Crumb has a single egg which was taken from a tree in an orchard about four miles west of Linesville about thirty years ago.

On October 18 and 22, 1940, I observed occasional small flocks at McNutt Knoll, feeding upon the fruits of the tulip tree and yellow birch. On January 3 and 6, 1940, I saw a flock, numbering about a dozen individuals, which were feeding upon the fruits of a white ash along a fencerow a short distance west of McNutt Knoll.

CANADIAN PINE GROSBEAK

***Pinicola enucleator leucura* (Müller)**

The Pine Grosbeak is a very rare and irregular winter visitant for which Sutton had but one record, and that for the Meadville region, "probably as early as 1885" (*fide* Huidekoper). I had hoped to find this species during the winter of 1940-41, the season of the notable invasion of Crossbills, but it was never recorded. On March 1, 1946, in the Pymatuning Swamp about two miles north of Hartstown, I observed an immature male and two females. The birds were seen at close range and in good light.

COMMON REDPOLL

Acanthus flammea flammea (Linnaeus)

The Redpoll is an irregular but sometimes common winter visitant. Sutton had no records other than a specimen which was collected at Meadville in the late fall of 1889 by Mr. Kirkpatrick. Todd (1940) gave a record of Mr. Seiple's for Linesville on November 8, 1926.

On March 6, 1941, I observed a half dozen birds at McNutt Knoll in the Pymatuning Refuge; and on March 20, I found a flock of about a hundred in the refuge area at the northern end of the old corduroy road. They were very tame, and I watched them for some time at a distance of less than fifteen feet as they fed upon the strobiles of the alders and yellow birches. On December 29, 1945, I observed a flock of about fifty feeding in alder thickets along the south shore of Ford Island. They were extraordinarily common throughout the region during the winter of 1946-47, when I saw them very frequently between January and late March. Flocks were often seen in bare spots along country roadsides. I observed them several times in our back yard on East Erie St., Linesville. Mr. Crumb observed them occasionally about his home south of Pennline where they were newcomers to his feeding station. Careful observation failed to disclose any individuals which might prove other than typical *flammea*.

PINE SISKIN

Spinus pinus pinus (Wilson)

The Pine Siskin is an erratic winter visitant. During some winters it is very common while it may be rare or entirely absent during others. Sutton found the species to be periodically abundant at Pymatuning Swamp. On May 16-17, 1923, he said that they "fairly swarmed in the tamaracks below Linesville", and from February 18 to 21, 1925, he observed that they were "abundant everywhere in the hemlocks north of Hartstown". He also found them to be abundant some years during late September. During the winter of 1940-41 they were abundant about Pymatuning Lake and Swamp between Linesville and Hartstown. They were seen regularly between mid-October and late April. This was a year when the hemlocks in this vicinity bore an exceptionally heavy crop of cones.

Sutton stated that the birds observed between February 18 to 21, 1925, were roving about in noisy pairs; but, at the time, it did not occur to him that they were mated. "Over and over again I watched the busy birds stripping fiber from the stalks of weeds and gathering woolly stuff from old buds and cocoons, and in my ignorance diagnosed their actions as quests for food. All this time they were probably building nests. These nests would likely have been completed during the next few weeks, and eggs laid during the middle of March. Therefore the great flocks of birds seen on May 16 and 17, 1923, were probably young birds, which had been reared at the Swamp, together with their parents." Sutton observed numerous old nests in the swamp which he provisionally identified as nests of the Goldfinch, but which he later

concluded to be those of the Siskin. Todd (1940) states that the Siskin apparently nested rather generally throughout the northern counties in 1925; but he is certain that it does not regularly breed there every year, the breeding range evidently tending to shift with the bird's food supply. It is highly improbable that the species nested regularly in the Pymatuning Swamp.

On April 11, 1941, I observed an apparently mated pair at the edge of the hemlock woods on McNutt Knoll. My search revealed a well completed nest saddled on a hemlock bough about twelve feet above the ground. The male bird stayed constantly with his mate, following her on each expedition for nesting material and perching nearby when she was working on the nest. Occasionally he sang a little or uttered the characteristic wheezy "spee" note. On April 17, the female was on the nest and evidently incubating. On April 19, when the nest was collected, she seemed quite fearless and was difficult to flush. It was a beautiful and compact, cup-like structure of grasses and rootlets lined with plant down and cow's hair obtained in the adjoining pasture. In appearance it very closely resembled a nest of the Goldfinch. The three eggs were of a pale greenish hue and were more or less spotted at the larger end with purplish-brown. This was apparently the first; and, as far as I know, the only record of a nest with eggs having been collected in the region. Mr. R. L. Fricke prepared it for the Carnegie Museum.

EASTERN GOLDFINCH

***Spinus tristis tristis* (Linnaeus)**

The Goldfinch is an abundant summer resident from early spring until late fall, and is occasionally found in the winter season. They are generally most numerous in late April and early May, apparently many of the birds being transients which pass on to more northerly regions. At this season of the year the males are resplendent in their fresh yellow and black plumage acquired by the prenuptial moult, and they sing almost incessantly.

Nests with full complements of eggs are found between late June and early August, the nests usually being placed less than six feet from the ground in bushes or small trees. The majority of the nests are located in fencerows, thickets, or old field areas in the open country. Sutton found a nest on August 21, 1925, which contained four heavily incubated eggs.

In the late fall and winter seasons I have occasionally seen the birds extracting the seeds from hemlock cones and birch and alder strobiles, after the manner of the Pine Siskin.

EASTERN RED CROSSBILL

***Loxia curvirostra minor* (Brehm)**

The Red Crossbill is a rare and very irregular winter visitant. Sutton stated that it was recorded at Pymatuning Swamp during the winter of 1922-23, "at which time great flocks of this and the succeeding



Goldfinch at rest.

species were seen everywhere among the hemlocks and other conifers, even as far south as Allegheny County". During that winter Sutton says that Mr. Hunter observed at least a thousand on one day near Hartstown.

During the latter part of the winter of 1940-41 there was another notable invasion of Crossbills in Western Pennsylvania. At least in the Pymatuning region, however, the White-winged species was far more numerous than the Red Crossbill. Not until March 7, 1941, did I observe an individual of this species. On that date I saw a lone adult male in a flock of Siskins at McNutt Knoll. On April 5, Messrs. Shoemaker, Harrison, and I observed seven birds at the same locality, three of which were adult males. On April 6-7, I counted thirteen individuals and collected two males and one female. On April 8, I observed four birds in the Pymatuning Refuge, near Linesville.

WHITE-WINGED CROSSBILL

***Loxia leucoptera leucoptera*
Gmelin**

Like the preceding species, the White-winged Crossbill is a rare and irregular winter visitant; but when it does occur, it may be temporarily abundant. Sutton stated that it was recorded between January 20 and March 18, 1923, when it was more abundant than the Red species (*vide* Hunter, et al.). It was much more abundant than the Red Crossbill during the invasion of 1940-41.

I first observed this species on February 10, 1941, when I came across a flock of about a dozen birds feeding on the cones of hemlocks on McNutt Knoll. It was seen daily at that locality until the latter part of May, the number seen varying from five to seventy-five birds. Flocks were also observed in various other parts of the Pymatuning area. On May 24, the latest date on which it was recorded, a flock of twenty-five birds was seen between McNutt Knoll and Linesville. They were feeding upon the fruits of an American elm. Three males and two females were collected between April 7 and 9, 1941.

RED-EYED TOWHEE

***Pipilo erythrophthalmus erythrophthalmus*
(Linnaeus)**

The Towhee is a common summer resident of thickets and upland wooded areas. It arrives in the spring during the early part of April: April 4, 1925 (*Bergstrom*); April 7, 1940 (*Oudette*); April 14, 1944 (*Shoemaker*). Generally by mid-April it is fairly common. In the fall it has been recorded until the middle or latter part of October: October 14, 1945, and October 18, 1941. Sutton had two winter records for the species: one seen near Hartstown during January, 1923 (*vide* Hutchens); and a female seen at Conneaut Lake from January 2 to 28, 1927 (*vide* Langdon).

Sutton found a nest with three eggs on May 3, 1922. The majority of the records for nests with eggs range between mid-May and mid-June. It is possible that at least some of the mid-June nests represent second nestings for the season.

EASTERN SAVANNAH SPARROW

***Passerculus sandwichensis*
savanna (Wilson)**

The Savannah Sparrow is a rather common transient and summer resident. It is regularly found in fields throughout the farming country, both in the low, marshy fields bordering the lakes and swamps in and the drier upland meadows.

In the spring it is recorded first during the latter part of March, or early in April: March 30, 1926 (Sutton); April 4, 1940 (Grimm). It is generally quite common by mid-April. It is recorded in the fall until late September or early October. Sutton found them common as late as October 1, 1925; and I observed them in the fall until October 12, 1945.

Todd (1940) states that "Savannah sparrows are very numerous in the neighborhood of Pymatuning Lake and Swamp. . . . Sooner or later in that vicinity, one is bound to flush a bird from its nest. . . . One nest that we found was in a tussock of marsh grass growing in the water; the others were all on drier ground. All were well concealed by overhanging vegetation". Nests with full sets of four or five eggs are usually found about mid-May. Sutton found a nest on May 29, 1922, in which there were two young and two eggs about at the point of hatching. A nest which he found on May 30, 1924, held five young; and another, found by Miss Helen Blair the following day, had five eggs about on the point of hatching. Young birds have been found in nests during the latter part of June, and it may be possible that these were second broods for the season. Mr. H. H. Harrison observed an adult with young in a field at Conneaut Lake on July 4, 1947.

EASTERN GRASSHOPPER SPARROW

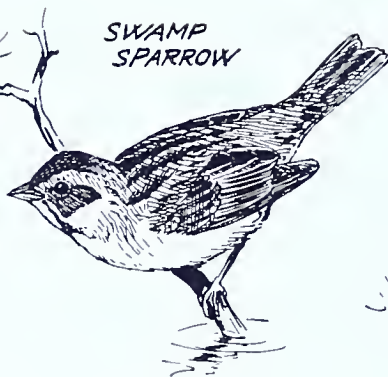
***Ammodramus savannarum*
pratensis (Vieillot)**

The Grasshopper Sparrow is a common summer resident, found in upland fields throughout the region. In the spring it seems to arrive regularly during the month of April: April 12, 1940 (Grimm); April 29, 1922 (Sutton). At least by early May it is commonly heard in the open, grassy fields about the Pymatuning Lake and elsewhere in the region. In the fall the birds are so quiet and obscure that their presence is very largely overlooked. Sutton said that after much searching they found individuals near Hartstown on August 30, and on September 15, 16, and 20, 1925.

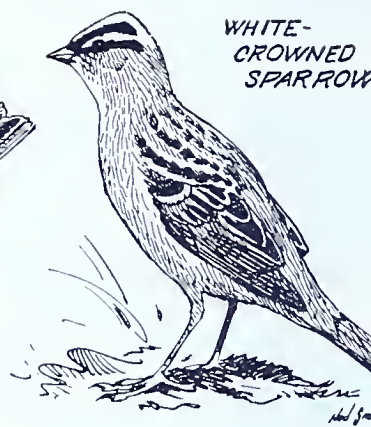
Nests with full sets of four or five fresh eggs have been found in this region between May 20 and the middle of June. Nests with well incubated eggs or recently hatched young are found occasionally in late May. Sutton found a nest with young on May 31, 1924.



GRASSHOPPER
SPARROW



SWAMP
SPARROW



WHITE-
CROWNED
SPARROW

WESTERN HENSLOW'S SPARROW

Passerherbulus henslowii
henslowii (Audubon)

The Henslow's Sparrow, while apparently quite local in its distribution, is apparently not an uncommon summer resident. Sutton was the first to discover it in the present region, thus establishing a record for its occurrence in Western Pennsylvania. In the spring of 1922 he found a breeding colony in a field about a quarter of a mile west of Hartstown. The following year this field was plowed and planted and Sutton stated that the birds could not be found anywhere. "Although we have searched the likely meadows diligently on every subsequent visit to the region, the species has not been recorded since 1922", he wrote in 1928.

In the years which followed, other observers found it during the breeding season in a number of localities in Mercer, Crawford, and Erie Counties, including the Pymatuning region. Messrs. Christy and Todd found them in fields in Beaver Township, between the Pymatuning and Jumbo Woods. In recent years we have found them, during the breeding season, in several fields along the south shore of Pymatuning Lake between Espyville and the Blair Bridge; in fields between Conneaut Lake and Hartstown; and in Beaver Township just south of the Jumbo Woods.

It probably arrives in the region late in April or early in May, although records which may even suggest arrival dates are sadly lacking. Most of my personal observations have been made in the latter part of May and in June. In the fall it probably remains regularly until late September or early October. Dr. Sutton, Mr. Shoemaker, and others observed one near the Ohio end of the Espyville-Andover causeway on September 27, 1941.

I have never found a nest of this species myself. Sutton found one with five newly hatched young on June 1, 1922, after many weeks of diligent searching. Todd (1940) states that a party from the Carnegie Museum succeeded in locating two nests in an unmowed field south of Linesville on May 22, 1934. Each of the nests held five partially incubated eggs.

EASTERN VESPER SPARROW

***Poocetes gramineus gramineus*
(Gmelin)**

The Vesper Sparrow is a common transient and summer resident. It is very commonly found in the open fields throughout the farming sections of the region, being one of the most common field inhabiting species about the Pymatuning Lake.

The first migrants arrive during the latter part of March or in early April: March 27, 1946; April 4, 1940; April 6, 1941. Sutton recorded it on March 29, 1926. By mid-April, or shortly thereafter, it becomes quite common. In the fall it is usually fairly abundant during September and is regularly common until the middle or latter part of October: October 16, 1925 (Sutton); October 21, 1946, and October 22, 1941 (Grimm). I observed a few individuals as late as November 8, 1940. In the fall a flocking tendency is noted.

Sutton found a nest with four half incubated eggs on May 13, and other nests with four eggs between May 15 and 22, 1922. Young just able to fly and others about ready to leave the nest were found at Harts-town on June 1, 1922. On May 17, 1940, Mr. Fricke and I found a nest with five eggs, south of Pennline; and on May 12, 1946, I found another with five eggs in the same general locality.

NORTHERN SLATE-COLORED JUNCO

***Junco hyemalis hyemalis*
(Linnaeus)**

In former years the Slate-colored Junco nested occasionally in the Pymatuning Swamp; but it was always abundant as a transient, and rather common as a winter resident. The first individuals which we saw in the fall showed up during the latter part of September or early in October: September 26, 1941 (Shoemaker); October 3, 1940, and October 8, 1945 (Grimm). It is regularly observed during the winter months but never in very large numbers. In late March or early April a decided increase in the numbers of these birds is invariably noted as migrants from regions to the south pass through the present region. Most of the birds move on before the last week of April, but occasionally stragglers are seen during the first week of May.

Mr. J. G. Crumb has an egg in his collection which was taken from a set of five in a nest about three miles west of Linesville. The exact date is unknown. Sutton observed two mated pairs in hemlocks west of Linesville on May 2, 1922, on which date he said one of the birds was building a nest in a low bank between two small hemlocks. On June 1 the nest was empty, but the young were seen with their parents nearby. Mr. Crumb tells me that years ago the Junco nested rather frequently; but he has not observed any nests, or even any birds, during breeding seasons of recent years. I found no evidence that it was breeding anywhere in the region between 1940 and 1947.

EASTERN TREE SPARROW *Spizella arborea arborea* (Wilson)

The Tree Sparrow is rather abundant as a transient and winter visitant between October and mid-April. It usually is seen about mid-October; but Mr. C. B. Shoemaker observed a few on September 24, 1944. During the winter season they are frequently seen in weedy fields in the farming sections, and they are rather characteristic winter birds of the marsh areas about the Pymatuning Lake. On most occasions they are by far the most numerous species of bird inhabiting the marsh areas in the winter season. In the spring large numbers are generally seen during the month of March; the influx of transients usually being quite apparent. By the end of the first week in April most birds have moved on to the north. Messrs. Shoemaker and Harrison recorded a few as late as April 15, 1944.

CHIPPING SPARROW *Spizella passerina passerina* (Bechstein)

The Chipping Sparrow is a fairly common summer resident about human habitations, both rural and urban. It has not been observed in wilderness areas except, as Sutton has stated, in the fall when the birds were flocking prior to migrating. In the spring they are seen first about mid-April: April 14, 1941, and April 16, 1946 (Grimm); April 14, 1944 (Shoemaker & Harrison). It has been regularly observed until about the first of October in the fall. Mr. Fricke observed it on October 12, 1940, at the Pymatuning Refuge. Sutton said that Mr. Bergstrom had seen it on October 16, 1925.

Nests with sets of three or four eggs have been found from early May on. Sutton found a nest with three eggs in a hemlock tree on May 5, 1922. Eggs of a second brood were sometimes found during late June or early July. According to Sutton the families stay together until late August.

EASTERN FIELD SPARROW *Spizella pusilla pusilla* (Wilson)

The Field Sparrow is an abundant summer resident wherever brushy fields occur in the region. Old abandoned fields overgrown with blackberry, blueberries, gray-stemmed dogwood, and other shrubs are its particular delight. In 1940 and 1941 it was abundant everywhere in the field areas which were planted with conifers; but now that the trees are tall, and their crowns have largely closed in, the Field Sparrows are no longer found there in any numbers. The pasture fields with their scattered hawthorns and other small trees and shrubs regularly support fairly large populations of this bird.

It arrives in the present region during the latter part of March or in early April: March 27, 1946; April 4, 1940; April 10, 1941. As a rule they are common nearly everywhere in mid-April. In the fall it has been regularly observed until the latter part of October or early November. I saw a small flock in a thicket near Linesville on December 9, 1945.

Nests with eggs have been found from early May until midsummer. Sutton found a complete set of eggs on May 12, 1922; and on May 12, 1946, members of the Pymatuning Group found a nest with three eggs of the Field Sparrow and one of the Cowbird. On May 20, 1941, Mr. Fricke and I found a nest in a small hemlock tree, near Linesville, which contained four eggs of the sparrow and a Cowbird's egg. Sutton found a nest of young birds near Hartstown as late as August 20, 1925.

EASTERN WHITE-CROWNED SPARROW ***Zonotrichia leucophrys leucophrys* (Forster)**

The White-crowned Sparrow is a regular but rather uncommon transient. It was usually scarce when compared with the White-throated Sparrow. In the spring migration it has been recorded between mid-April and the third week of May. Messrs. Shoemaker and Harrison recorded it on April 14, 1944. Sutton recorded it as late as May 20, 1922. The latter observer stated that they were "quite abundant" near Hartstown and Shermansville between May 15-16, 1923, and May 15-17, 1925.

In the fall, Mr. C. B. Shoemaker observed it as early as September 1, 1944; but it generally is not seen until the later part of the month. On October 19, 1940, I observed several individuals in a flock of White-throated Sparrows near Linesville. Sutton states that Mr. Kirkpatrick saw one as late as October 25, 1908, at Meadville.

Chipping Sparrow feeding young.

Photo by A. A. Allen.



WHITE-THROATED SPARROW *Zonotrichia albicollis* (Gmelin)

The White-throated Sparrow is a regular and abundant transient both in the spring and in the fall. Records during the spring migration range between mid-April and the latter part of May. The height of the migration apparently occurs during the first two weeks of May. I observed it on April 19, 1941, but not until April 29, 1940. Sutton said that the birds arrived on April 28, 1922. He observed one as late as May 29, 1922, and stated that Messrs. H. H. Elliott and Jesse Jones saw one on May 28 at Crystal Lake, Hartstown.

There is but one nesting record for this species in the region. Todd (1940) states that L. E. Hicks found a nest containing three young, in the Ohio portion of the swamp, on June 14, 1932. In the Pymatuning refuge on May 17, 1937, Chapman (1937) observed a female which was carrying nesting material.

The first individuals are again seen during the latter part of September in the fall: September 22, 1925 (Sutton); September 23, 1941, and September 25, 1940 (Grimm). They are quite generally abundant during the early part of October. I observed the last individuals as late as October 28, 1940.

EASTERN FOX SPARROW *Passerella iliaca iliaca* (Merrem)

The Fox Sparrow is a regular, although not a common transient in the present region. Sutton said that it occurred "chiefly in the woodlands of the higher regions". I have never seen it in the swamp woods, and but on a few occasions in the woodlands surrounding the Pymatuning Lake and Swamp.

Sutton stated that Mr. Bergstrom found it to be common near Shermansville on March 8, 1925. Our records in recent years all pertain to dates in April, the latest of which was April 20, 1940. Sutton observed a few birds on April 27-28, 1922, and concluded that the spring migration was about over by that time.

In the fall it has been recorded very rarely in recent years. Sutton quoted a Meadville record of October 13, 1913 (*vide* First) and one of November 7, 1908 (*vide* Kirkpatrick) as possible extremes. The latest date on which I have seen the bird in the fall was on November 12, 1940, when I saw one on McNutt Knoll.

LINCOLN'S SPARROW *Melospiza lincolnii lincolnii* (Audubon)

Sutton noted that "while this sparrow is doubtless a regular spring and fall transient, it is so retiring in its habits and usually so silent that it nearly always escapes detection". In recent years as well, the records for this species have been extremely scanty, but it is probably much more common than the available records would lead us to believe.

On May 15, 1925, Sutton observed three birds near Shermansville, along the weedy edge of an upland field bordering the swamp. He states that on May 24, Miss Helen Blair observed a bird near Crystal Lake, Hartstown, which sang a number of times and which she was certain was of this species. On May 19, 1940, Mr. R. L. Fricke collected one near Linesville. The following day he and I saw another along the Bessemer Railroad tracks a short distance east of town. On May 5, 1946, Mr. C. B. Shoemaker and I observed one along the edge of the woods in which the Ashtabula County, Ohio, heron rookery is located. The only fall record is that of September 27, 1941, on which date Dr. Sutton, Mr. Shoemaker, and others observed one near the Ohio end of the Espyville-Andover causeway.

SWAMP SPARROW

***Melospiza georgiana* (Latham)**

The Swamp Sparrow inhabits the marshes and swamp thickets where it is locally abundant and a characteristic species. It is not found in the heavily wooded swamp areas but is very common in the rather open and sparsely wooded areas where a rank growth of marsh herbs and shrubs occurs in the understory. It is common in such habitat about the Pymatuning Lake and the Pymatuning Swamp, at Smith Marsh, and in the extensive Conneaut Marsh.

The Swamp Sparrow arrives late in March or early in April: March 26, 1943 (Shoemaker); April 4, 1940 (Grimm); April 5, 1941 (Hicks). By mid-April it is generally common, and its song is heard almost constantly in all of the regional breeding territory. It was present on October 17, 1940, in the marsh at Blair Bridge where a male was heard singing. I saw it on November 13, 1941, at the Shermansville end of the old corduroy road. The following day Mr. Shoemaker saw several in the vicinity of Blair Bridge. Sutton quoted records for the months of December, January, and March in former years (*fide* Kirkpatrick), and on February 19, 1925, he observed an individual near Hartstown "which seemed to be in perfect health and vigor".

Sutton found nests of this species ready for eggs by May 7, and by June 1 small young were often found. Some of the nests contained three eggs, but the usual number was four or five. He did not find an egg of the Cowbird in any of the nests which he examined. However, on May 23, 1940, Mr. Fricke and I found a nest west of Linesville which contained three eggs of the sparrow and one of a Cowbird. Mr. Shoemaker found a nest on June 1, 1943 which contained eggs on that date.

MISSISSIPPI SONG SPARROW

***Melospiza melodia euphonia* Whetmore**

Song Sparrows occur in the present region throughout the year, but they are invariably less common and less often observed during the winter than at other seasons. They are abundant in the spring and

fall when migrants are passing through the region and are very common summer residents. They are found in all of the more open portions of the swamp as well as in the uplands where they regularly frequent roadsides and streamside thickets. They are likewise not uncommon about the home grounds and gardens, both in the urban and rural areas.

It is always difficult to obtain definite migration data, but the evidence indicates that the first migrants reach the region about mid-March, and many probably pass through as late as mid-April. In the fall the migration seems to occur between mid-September and mid-October. It is not definitely established whether the wintering individuals are actually permanent residents or birds which normally nest in regions to the north. Sutton, however, believed that the nest with highly incubated eggs which he found on April 28, 1922, was that of birds which had spent the winter at the Pymatuning, because all of those found later held incomplete or fresh sets of eggs. It seems logical to me that even migrants reaching this region by the latter part of March could have highly incubated eggs by the latter part of April.

Most of the nests with full or fresh sets of eggs have been found in May and June, the latter very probably representing second sets for the season. Five eggs usually comprise a full set. Sutton gave from three to six as the range. On May 23, 1940, Mr. Fricke collected a set of four well incubated eggs. On May 20, 1941, we saw a nest with five eggs and also noted young birds out of the nest.

LAPLAND LONGSPUR

***Calcarius lapponicus lapponicus*
(Linnaeus)**

Sutton stated that "once or twice Mr. Bergstrom and others have noted birds resembling English Sparrows among the flocks of Snowflakes". Mr. James W. Ramsey (1948b) recorded the occurrence of this species at Greenville between December 16 and 27, 1945. On December 20, two individuals were seen by him at his feeding station. He states that they were both tame and so fearless that he could have touched them.

EASTERN SNOW BUNTING

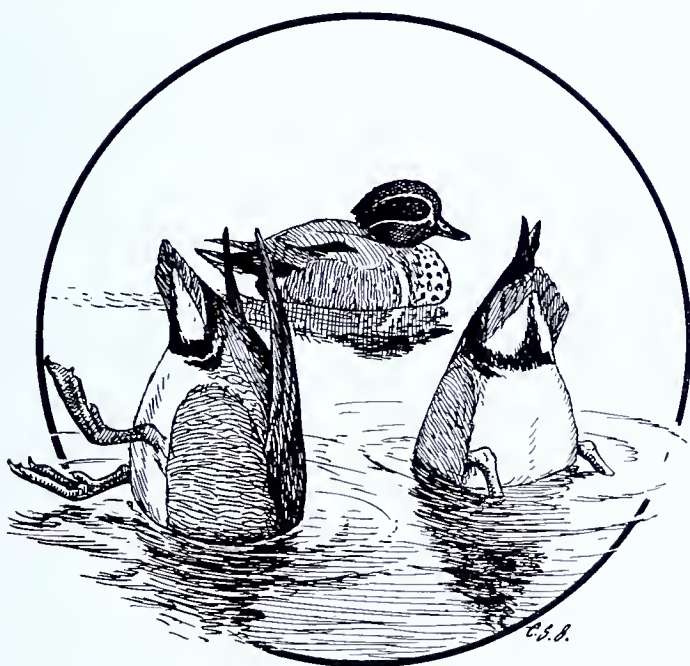
***Plectrophenax nivalis nivalis*
(Linnaeus)**

Sutton said that while Snow Buntings were "at times doubtless locally abundant, it is certainly not regularly found in the area under discussion". Our experiences, however, indicate that it is certainly a fairly regular winter visitant in the Pymatuning region. Mr. J. G. Crumb tells me that he frequently observed flocks of these birds during the winters of many former years. Sutton himself stated that Mr. Bergstrom had seen them in various parts of the present region dur-

ing the months of January and February of 1924, 1925, and 1926. Mr. Bergstrom (1930) later provided records for 1928 and subsequent years.

The earliest date on which it has been recorded in the fall was on October 26, 1941, when Mr. Fricke and I saw four birds along the causeway near Espyville. On November 7, 1940, I saw seven a short distance south of the Linesville spillway; and on November 15, 1940, a flock of about a hundred was seen at the Espyville end of the causeway. On December 20, 1945, I recorded a flock of about seventy-five on Ford Island; and on December 29, a flock of at least two hundred was seen in the Pymatuning Refuge in the vicinity of the old corduroy road. The latest date on which any were seen in the spring was on March 11, 1940 (Crumb).

The numbers of Snow Buntings observed during the several winters varied considerably. The flocks were given to much wandering and they were very seldom observed in the same locality two successive days. At times very large flocks were seen, while on other occasions only a few birds were noted. On March 9, 1940, Mr. Crumb observed a flock on his farm south of Pennline which he estimated to contain at least two thousand birds. He saw another of only a few hundred individuals on February 12, 1941. Seiple (1941) recorded having seen a flock of more than a thousand about four miles south of Linesville on February 2, 1941. On March 7, 1940, I saw a flock of nearly a thousand in fields between Westford and Espyville. Other large flocks were frequently reported during those winter months. They were usually observed most frequently during the months of January and February.



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As the sun sets over the Pymatuning all of its feathered denizens silently seek the shadow of protecting night.

Photo Penna. Game Comm.



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Photo by W. Bryant Tyrrell.

MAKE HOMES FOR BIRDS

House Wren Feeding young at home-made nest box.



Photo by Hal H. Harrison.

FEED THE BIRDS

White-breasted Nuthatch at Sunflower Feeder.

RESTORATION

The Commission is doing everything possible to improve conditions for wild waterfowl. Many impoundments are being established on State Game Lands which now number over 900,000 acres, and land-owners are encouraged to build farm ponds to attract waterfowl and to provide a water supply for farm uses.

DUCK PROPAGATION

During 1951 the Pennsylvania Game Commission purchased 7,000 day-old ducklings, some of which were pure Mallard and the others a cross of the Mallard and Black Duck. The ducklings were raised at State Game Lands #213 in Crawford County and liberated throughout the State at 4 to 7 weeks of age.

Beaver dams and ponds in remote areas were chosen as points of release. It was felt that little or no contact with people would help the ducks to retain their natural wildness.

In addition to attracting other waterfowl during the fall migration and thus improving shooting, it is hoped that a large number of those liberated will return in the spring to the place where released and add to the production of native ducks.

All of the ducks were banded with aluminum bands bearing these words "Please notify Pennsylvania Game Commission, Harrisburg, Pa." Anyone who finds ducks which have been killed or shoots a duck bearing one of these bands is urged to notify the Game Commission as to the band number, the date and location of the kill, and the hunter's name and address. Information on legbanded ducks killed by predators or found dead from any cause is as important as that on fowl taken by gunners. Everyone who notifies the Game Commission of a banded duck killed or found will be advised as to where and when the bird was released.



ABOVE—The Commission is encouraging the establishment of farm ponds and the building of similar impoundments by sportsmen's organizations in their club grounds to further provide additional resting and feeding places for waterfowl.

BELOW—A portion of the nearly 7,000 young mallard and black ducks which were propagated by the Game Commission and released on beaver ponds, hidden marshes and other inaccessible spots. All of the released ducklings were leg banded and if hunters kill any of these birds they are requested to forward the bands to the Game Commission at Harrisburg.



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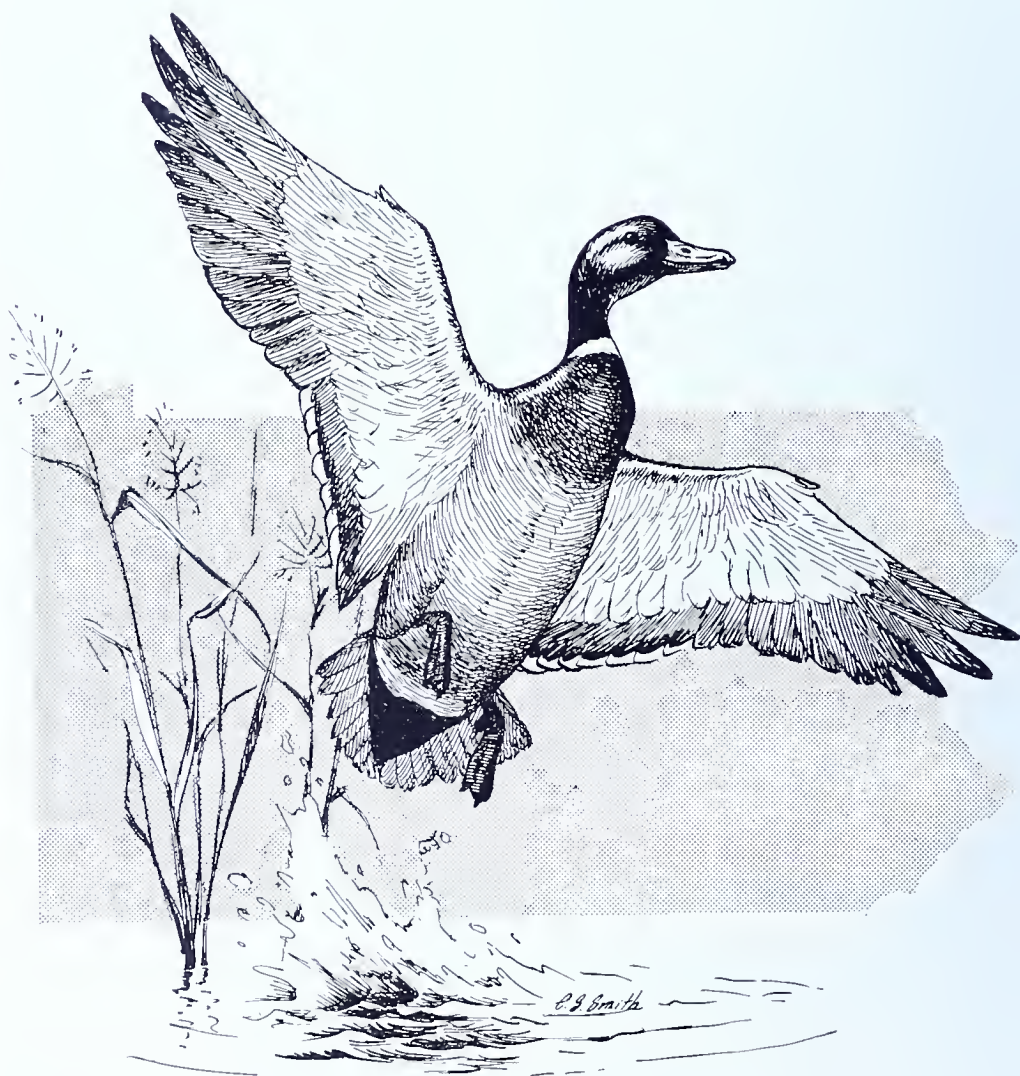




Photo by P. J. Van Huizen, U. S. Fish and Wildlife Service

PINTAILS ON THE WING

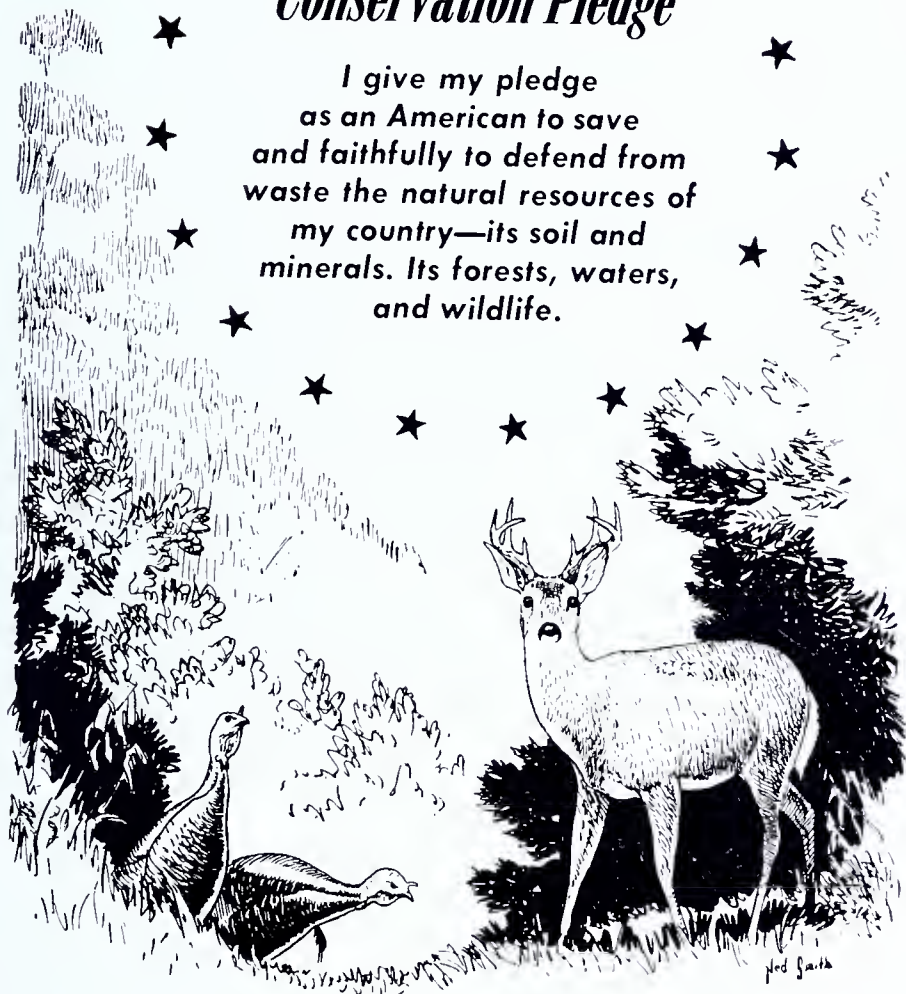


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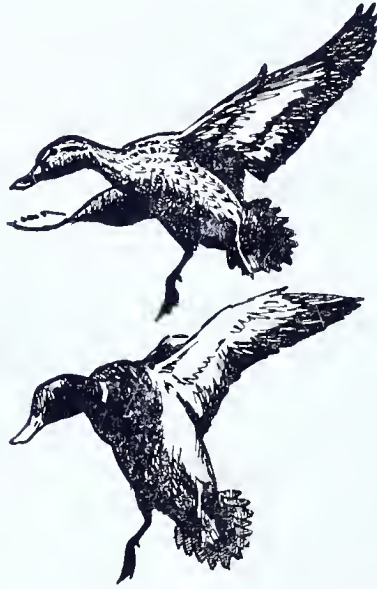
Conservation Pledge

I give my pledge
as an American to save
and faithfully to defend from
waste the natural resources of
my country—its soil and
minerals. Its forests, waters,
and wildlife.



16 APR 1953

HELP RESTORE



JRA

WATERFOWL

